

Report

of

The Mayor's

Market Commission

of

New York City

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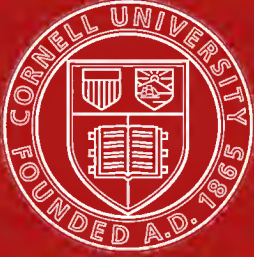
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REPORT
OF
THE MAYOR'S MARKET
COMMISSION

OF
NEW YORK CITY

HON. CYRUS C. MILLER, *Chairman*
HON. JOHN PURROY MITCHEL
HON. GEORGE MCANENY



DECEMBER, 1913

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I. LETTER OF TRANSMITTAL.

December 30, 1913.

HON. ARDOLPH R. KLINE,

Mayor of the City of New York.

Sir: The Market Commission appointed by Mayor Gaynor on May 14, 1912, to investigate and report on the conditions under which foodstuffs are marketed at present in the Boroughs of Manhattan and The Bronx, and to make recommendations for the bettering of those conditions, submits the accompanying report. The inquiry was extended to the Boroughs of Brooklyn, Queens, and Richmond, by invitation of the authorities of those Boroughs.

After an extended investigation of market conditions in the City of New York through the conduct of public hearings, at which representatives of many classes of marketmen, railroad men and other experts have given testimony, and the study of monographs and reports from many sections of this country and many foreign cities, your Commission believes that the recommendations contained in its report suggest the means of effecting a substantial reduction to the consumers of this city in the cost of their food. How pressing the need for this is it is hardly necessary to state.

Respectfully submitted,

CYRUS C. MILLER,

President of the Borough of The Bronx, Chairman.

GEORGE MCANENY,

President of the Borough of Manhattan.

II. OBJECTS AND WORK OF THE COMMISSION

What subsequently expanded into the work of the Market Commission had its origin in a conference held at Borough Hall, The Bronx, on November 9, 1910, between the Borough President and a committee of the Manhattan and Bronx Retail Grocers' Association to discuss the question of establishing a public produce market in the Borough of The Bronx. A committee of citizens was appointed to select a site for such a market. At first the plan was to confine the movement to the Borough of The Bronx, where the poor marketing facilities were a burden on both dealers and consumers.

On May 14, 1912, Mayor Gaynor appointed this Commission to examine into the market conditions of The Bronx and Manhattan and to report such remedies as might be found advisable for present marketing conditions. He also appointed an Advisory Committee to coöperate with the Commission toward the same ends. The Commission consists of—

Hon. Cyrus C. Miller, President of the Borough of The Bronx, Chairman.

Hon. George McAneny, President of the Borough of Manhattan.

Hon. John Purroy Mitchel, Ex-President of the Board of Aldermen.

Elizabeth I. Toms, Secretary.

The Advisory Committee consists of—

John Aspegren, Vice-President, New York Produce Exchange.

Mrs. Elmer Black.

Edward B. Boynton, Bronx Industrial Bureau.

Franklin Brooks, Attorney-at-Law.

John Buckle, President, Gansevoort Market Business Men's Association.

Henry Dunkak, Ex-President, New York Mercantile Exchange.

Emil Fleischl, Produce Commission Merchant.

Charles Haslop, member New York Retail Grocers' Association.

Mrs. Julian Heath, President, National Housewives' League.

Carl A. Koelsch, President, Washington Market Merchants' Association.

Nelson P. Lewis, Chief Engineer, Board of Estimate and Apportionment.

Richard W. Lawrence, North Side Board of Trade.

L. J. Lippmann, Secretary, New York Branch National League of Commission Merchants.

Mrs. George V. Mullan.

Mrs. Lewis Nixon.

William Church Osborn, Chairman, Committee on Markets, Prices, and Costs,
New York State Food Investigating Commission.

George S. Otis, West Washington Market Association.

William R. Patterson, Assistant Commissioner of Public Works, Borough of
Manhattan.

Joseph E. Smith, Produce Commission Merchant.

R. A. C. Smith, Commissioner of Docks and Ferries.

Mrs. Flora Spiegelberg, member Housewives' League.

Since the appointment of the Commission and the Advisory Committee the work of examining into market conditions has gone on in various ways. The Gansevoort

Market Business Men's Association, the West Washington Market Association, the Chelsea Association of Merchants and Manufacturers, and the Greenwich Village Public Service Committee asked us especially to examine into conditions in and around Gansevoort and West Washington Markets, looking toward the construction of a new market in that vicinity when the present West Washington Market should be taken for dock purposes. They submitted to the Commission a brief and plan for a new market building in the vicinity, which is printed in the Appendix to this report. The Greenpoint Taxpayers' and Citizens' Association requested us to examine market conditions in the Greenpoint section to determine the advisability of locating a public market there in the neighborhood of the proposed Barge Terminal at Greenpoint. The authorities of the Boroughs of Brooklyn, Queens, and Richmond requested us to examine conditions there and to make recommendations to remedy conditions.

The Commission and Advisory Committee have held weekly hearings and have taken the testimony of wholesale and retail dealers, railroad men and others acquainted with the business of the markets. Synopses of the testimony taken will be found in the Appendix. The Commission has made few statistical studies, as the very excellent estimates and statistics compiled by the Committee on Markets, Prices and Costs of the State Food Investigating Commission and others were available, and statistics are not necessary at this time to show either that prices are high or that the facilities for distribution in this city are inadequate.

In the meantime, by means of speeches, newspaper and magazine articles, and the distribution of pamphlets, reprints and reports, the work of educating the public on the market question has gone forward steadily. Much valuable aid has been given to the Commission by such men as Mr. L. J. Lippmann, Secretary of the New York Branch of the National League of Commission Merchants; Mr. John Buckle, President of the Gansevoort Market Business Men's Association; Mr. George S. Otis, of the West Washington Market Association; and Mr. Carl A. Koelsch, President of the Washington Market Merchants' Association; and by such women as Mrs. Elmer Black, Mrs. Flora Spiegelberg, Mrs. Julian Heath, President of the National Housewives' League; Mrs. Bleecker Bangs; and Dr. Mary E. Pennington, Chief of the Food Research Laboratory of the United States Department of Agriculture. Mrs. Black accumulated a great deal of valuable data on a tour of markets in Europe which she laid before the Commission in her testimony and in a report which she printed and distributed at her own expense. The Commission has been fortunate in being able to secure several detailed studies of special features of modern marketing by persons having expert knowledge of the subjects treated. These will be found appended.

III. SUMMARY OF MARKET CONDITIONS IN NEW YORK CITY

The marketing system of New York City may be briefly outlined and its greatest defects indicated as follows:

(1) Food supplies are brought to the city for—

1. A resident population of 5,000,000.
2. A transient and commuting population numbering many thousands daily.
3. The provisioning of outgoing steamships and trains.
4. Export to other cities and towns.

It is estimated that the value of the foodstuffs brought to New York City annually is \$900,000,000.

(2) Most of New York's food supplies are brought by railroad and steamship and come over great distances.

- (3) The farming district around the city is not great enough or varied enough in its productivity or producing in long enough seasons to supply the needs of the city in any line. Suburban developments are all the time pushing the farm lands farther and farther away. It is impossible to alleviate conditions by establishing markets for producers to sell to consumers.
- (4) New York City has no modern wholesale market. Supplies are received at many points, chiefly at the lower end of Manhattan Island, are sold sometimes at the terminals and sometimes at the stores of the dealers, and thence must be trucked all over the city and out to suburban places.
- (5) The terminals in the city where food products are brought in are entirely those provided by the transportation lines and are not sufficient to handle the volume of business that passes through them, in the right way. There is a great deal of congestion of trucks and wagons, causing delay in moving the goods, and insufficient means of protecting the goods from the weather and from extremes of temperature. Proper inspection is difficult.
- (6) There is no supervision of marketing on the part of the city as there is in foreign cities and in some cities of our own country.

IV. PRESENT METHODS OF MARKETING FARM CROPS

A hundred years ago the perishable farm products used in the city all came from nearby farms—there were no means of bringing them over greater distances. When Washington Market was built in 1812 it was a place where the farmer brought his goods and sold them to the people. To-day conditions are more complex and the means of establishing a direct route between producer and consumer less obvious, but public interest in the matter and public provision of the right kind of market is not less important.

To-day the development of railroad and steamship has brought the farms of South Carolina and Kansas as near New York City as were those of Long Island and Westchester County one hundred years ago. It has removed any limitations on the growth of the city imposed by the difficulty of getting an adequate food supply, and, as a consequence, the city has grown until it is dependent upon the production of a very wide area for its continued existence.

The commonest articles of food are often brought great distances: potatoes, for instance, are brought to the New York market from Maine, from the Western States, from Bermuda, Scotland, Ireland, and Belgium; onions, from the South—Virginia, South Carolina, and Texas, from the Western States, and from Italy and Spain; green vegetables of all kinds are brought from nearby farms and in very large quantities from the South and West—in the flush season one railroad bringing over 300 carloads a day, and one steamship line running two steamers daily in the busy season between New York and Virginia; oranges and grapefruit come from California and Florida, the West Indies and Mediterranean ports; apples, from New England and New York, the Middle West, Oregon and Washington; cauliflower comes in the early season from Cape May and later from Long Island; melons from California, Colorado and the South; bananas, from the West Indies and South America, and so on.

Under these conditions it is impossible for marketing to be carried on to any great extent directly between producer and consumer. An army of middlemen are engaged in collecting, grading, shipping, and distributing the farm produce used in the city, and, though they have been accused of dishonest practices, and sometimes justly so, it is likely that a considerable evolution in marketing methods will have to take place

before their services can be dispensed with. They perform labor that individual consumers could not perform for themselves without expense far greater than the middlemen impose. That is not to say, however, that products do not often pass through too many hands and have too many increments added to their prices. It is the very fact that present conditions necessitate this that leads us to propose better marketing facilities for the city.

The men who handle the farm products between the farm and the New York City consumer may be classified roughly as: (1) shippers, (2) commission merchants and wholesalers, (3) jobbers, (4) retailers.

The ways in which goods are collected and shipped to market vary greatly. Many of the farmers nearby drive in themselves with their goods and sell to jobbers and retailers in the few market squares provided by the city. Those who are too far away to do this may be in touch with some merchant in the city and ship to him, or they may sell to a collecting agent or to a country storekeeper who acts as a collecting agent and ships goods to merchants in the city. Many commission houses employ agents to go through the country districts and buy from the farms. The prices they give are apt to be low, but the farmer often prefers a cash sale at a low price to the risks of sending goods to a distant market on his own responsibility. Many commission houses also employ men in the country to grade, pack, and ship the goods thus collected from the farmers, as the farmers are often quite as unreliable in grading and packing their goods as the middlemen are reputed to be in selling them. Many farmers specialize in certain products so that they may ship in carload lots to commission merchants or wholesalers.

Recent years have seen the formation of a great many coöperative associations of producers. Where the farmers of a district all raise more or less of the same products they unite in an association to take charge of the grading, packing, shipping, and marketing of their goods. They do not eliminate the middleman, but they eliminate his profits. They employ him and pay him a fixed salary for his service and return to their members any surplus that accrues over the expenses of the association. Such an association well managed is the best protection the farmer can have. By its size and importance it inspires respect, and, by establishing a uniform system of grading and marking goods that is known and trusted, it protects its members from the worst enemy they have, the dishonest farmer, who, by fraudulent packing, destroys the confidence of buyers that goods will be as represented. Many of these associations keep in constant touch with conditions in all the large markets of the country and, after shipments are on their way, divert them by telegraph at intermediate points from their original destinations to other cities where the markets promise better prices.

The largest receivers in the city are the commission merchants or wholesalers who receive goods on consignment or sale and sell to jobbers and sometimes retailers. There are something over 500 men engaged in the commission business in this city. In general, they charge a commission of five per cent. on sales. All sorts of malpractices have been attributed to them, such as reporting goods as received in bad condition when they really have arrived in good condition, holding back goods in the freight yards to keep prices high, reporting sales as made at the day's low figure when they were really made at a higher, charging higher rates for cartage to shippers than they paid the truckmen, etc. Enough of these things have been endured by the shippers to cast suspicion in their minds upon the whole group. The enactment of protective measures and greater publicity of market conditions should do much to remedy the situation. Such measures should be welcomed by those who are seeking to do an honest business, unless they throw an unfair burden on the trade.

Advanced legislation has been enacted in this line in some of the Western States, notably Minnesota, and a beginning has been made in New York in the bill passed

last year requiring the registration of all commission merchants and the giving of a bond of \$3,000 to ensure fair dealing. This gives greater protection to shippers than they have had before, but it throws the burden entirely on the commission man, whereas the standards of honesty among shippers have not always been found to be above reproach. It would seem to be no more than fair to provide for a similar registration of shippers with the State or National Bureau of Agriculture, and the establishment of standard requirements for the grading of farm produce. Shippers could then be held accountable to such Department of Agriculture for false marking of goods, and, in time, the shipper's registry number or identification mark on a package would come to be recognized as a guarantee of quality. Such measures increase business confidence.

It is impossible for the large wholesale dealers and commission men in the city to conduct their businesses on such a scale that they can divide up their goods into small enough lots to sell to the ordinary small retailers. For this reason an intermediate group of middlemen has arisen, known in the New York market as jobbers, who perform the next step in the dividing and distributing process. Goods sometimes pass through the hands of three or four such dealers before reaching the retailer. They sell to hotels and to fruit and vegetable dealers in the outlying districts who cannot take the time necessary to buy in the primary markets, to go from place to place and select just the right grade of goods for their trade, and many of whom cannot take goods in large enough lots to buy as the commission dealers must sell. Some deliver at their stores to the retailers' wagons, some make deliveries by their own or hired trucks, and others drive around from store to store and sell to grocers and vegetable men. The Harlem Market in Manhattan contains, in addition to the farmers' market, a jobbers' market, and is the base of supplies for many dealers in upper Manhattan and The Bronx, as it is the nearest market where they find any considerable variety. There are also some jobbers and some direct receivers in The Bronx. In Wallabout Market, where most of the Brooklyn merchants get their supplies of perishable goods, the dealers are jobbers for the most part, who buy from the large receivers in Manhattan—in some cases Long Island produce that has been taken into Manhattan for its first selling and then brought back—and at the Brooklyn terminals:

We have retail stores of various types: large markets carrying meats, groceries, fruits, and vegetables; chains of grocery stores and individual grocers, butchers, dairy stores, fruit and vegetable men, and delicatessen stores. Of late years there has been a considerable increase in the number of small neighborhood stores, and, while the system makes necessary some duplication of overhead expense and service, they are a great convenience to the majority of buyers and are so regarded. So many people live in small apartments where there is no space to store supplies for more than a few days' consumption that they must buy often and in small quantities, and, to save time, nearby. The convenience and personal service of these small stores outweigh many advantages that the large markets offer. The main advantage of the large retail market now lies in its ability to buy cheaply in large quantities. If the small retailer can have access to a terminal market where he can buy goods before they have passed through two or three hands, and can learn to combine with other retailers in buying, he will be able to compete, not only in service but in price, with the large retail market. There has been an increase in the number of small neighborhood stores which deal in a few articles and sell their entire stock every day or two. This approximates the practice of the pushcart dealer, who is the cheapest retailer in the trade.

V. PRICES

Many elements go to make up the prices the consumers in the city pay for farm produce. Chief of these are—

- Costs of production.
- Grading and packing.
- Transportation.
- Costs of selling by—
 - Commission merchants and wholesalers.
 - Jobbers.
 - Retailers.
- Regrading and repacking.
- Trucking.
- Storage.
- Loss.

In general, the costs of production in recent years have increased. The trend of population toward the cities has lessened the available supply of farm labor. In many places where a few years ago farm labor could be had at \$2.25 a day farmers are now actually suffering for want of labor at \$2.50 a day. Cultivation has grown more intensive and the use of costly fertilizers has become common. Better fruits and vegetables are being produced to meet the growing demand for better quality, but often by costly methods that do not necessarily increase the quantity of production. The market to-day demands more careful grading, and transportation over great distances, more careful packing than formerly, all of which means added cost for labor.

In most instances where prices have risen in the last ten years the cost of transportation has remained a constant factor. The cost of railroad transportation is not high, though rates on small lots are much higher and service slower than on carloads, and it does not add a large percentage to the cost of food. It averages 7 mills per ton mile, as compared with 3 mills per ton mile for transportation over inland waterways, and 23 cents per ton mile for transportation by horse-drawn truck. In other words, a ton of freight could be transported by rail nearly 700 miles for what it would cost to carry it 20 miles by horse-drawn conveyance. The ill effects of the long time required for such long hauls are obviated by the use of ventilated and refrigerated cars, and, in comparison with those of wagon transportation, are offset by the greater damage caused by the jolting of a wagon. This very low railroad rate in comparison with the cost of trucking puts a distant producer almost on an equal footing with the one nearby who drives to market, and tends to equalize conditions throughout the country.

The general wholesale price levels that prevail on most commodities are the result of a balance of forces over which the city has little control. The practice of large individual shippers and producers' associations of shipping in carload lots and diverting shipments in transit to the most favorable markets, and the extended use of refrigeration in storing surplus products, have tended to give stability to markets and to level up prices in all the large markets of the country.

Production, however, is hampered by a lack of good markets in the large cities. Even low prices are not so great a burden on the farmer as uncertainty of being able to market his goods. If the farmer can be sure of a market for his goods he will produce more, and can afford to take a lower price, and still make more money than he did before. For example, he can raise 200 bushels of potatoes for very little more than the cost of raising 100 bushels. If he sells the 100 bushels for 50 cents a

bushel they will bring \$50. If he sells the 200 bushels for 40 cents a bushel they will bring \$80. Certainty of a market will induce him to raise 200 bushels, to the benefit both of himself and the consumer. Our lack of good markets tends, therefore, to keep out of the city foodstuffs that we might consume and our lack of good distributing facilities in the city adds a large percentage of cost to the goods we receive. This percentage can be reduced by providing better facilities for wholesale distribution, and prices to that extent lessened, while a larger percentage of what the consumer pays will be returned to the farmer.

The most expensive part of the distributing system is the retailing. Analyses of price increments from producer to consumer show the greatest percentage of increase to be between the wholesaler's price and the retailer's price. This means that the costs of distribution in the city are greater than the costs of getting goods to the city, or that the means used are much less efficient, or both. The retailer is not to blame for the large increase which he adds to the price. His services are many times more complex and costly in themselves than the services of any of the other middlemen. These dealers are under expense for rent and advertising, for getting their supplies to their stores, for maintaining sanitary conditions and attractive appearance, for telephone and delivery service and carrying credit accounts. The habit of telephoning and demanding delivery many times a day—a practice which in the aggregate probably adds a considerable percentage to the cost of food—has become common, and it is not to be expected that it will be broken easily.

Every step toward better living conditions has its price and must be judged according to whether it is worth that price. Precautions for cleanliness, such as putting goods in packages, and wrapping fruit in tissue paper, and the convenience of having a multiplicity of small stores with their duplication of service, all mean increased cost, and, so long as the public demands these things and pays the price, business will continue to provide them. If the retail dealer can find a market such as a wholesale terminal market, where he can buy his goods cheaper, he will be able to sell them cheaper. Especially will this be so with the small dealers who now must keep horse and wagon to go to market. If they can have their goods delivered to them by automobile trucks from the market for a nominal charge one of their expenses will be lessened. Another cause of expense to the retail dealer is the fact that, while he deals mainly in a small number of articles, he often thinks it necessary to invest his capital in a large number of articles which remain on show in his store and are seldom bought. This is dead capital, which adds to his expense.

It has been suggested, and the idea is being tried out in some places, that retail dealers should have different prices for the same goods, according to the service they render. For example, one price for cash sales to people who carry the goods away themselves; a higher price for cash and delivery; a still higher price for credit and delivery. This would ensure the customer who paid cash and carried away his goods the minimum price and save him from paying the bills of other customers who bought goods on credit and failed to pay their bills. It is an open question whether such a plan will be feasible. The same end will probably be reached, in some neighborhoods at least, by the establishment of small stores dealing in a few articles and selling for cash to customers who live near enough to carry the goods away.

The greatest fault of the present retailing system is the inflexibility of prices. They fail to reflect the fluctuations of wholesale prices so greatly that the wholesale market may be glutted and goods be spoiling in the freight yards, and the retail prices through the city be scarcely depressed. This condition is due to many causes: A season of high prices will accustom the public to regard those prices as normal, with the result that they either cease to buy the article or view with suspicion goods

marked at a lower figure. The public knows very little about wholesale prices, as they are not reported in a way to reach average consumers; consequently the demand for goods is not formed intelligently. The system of marketing goods through a long series of dealers tends toward rigidity in demand and price. Both jobber and retailer are cautious about buying more than their accustomed trade will move off, and will rather buy the usual quantity and hold it at a profitable price than take the risk of buying freely when the market is low and working up a demand for the goods. Better markets that will put the retailer in direct touch with primary market conditions, together with greater publicity of wholesale prices, will undoubtedly make him and his trade more responsive to conditions of supply.

VI. PRESENT FACILITIES FOR DISTRIBUTION WITHIN THE CITY

We have in New York large markets for many commodities—such as the Produce Exchange, the Stock Exchange, the Wool Exchange, and the Cotton Exchange—but we have no Food Exchange. The New York market for fresh produce is not centered in any one place, except in the case of a few products, such as California fruits, which are marketed on the Erie piers. The idea of a large central market where the maximum of products and the maximum of buyers can meet does not obtain in the provisioning of the city: the business is conducted on a minimum basis, every dealer buying only the goods which he can dispose of to customers with whom he comes in personal contact.

The primary food market of the city comprises a large district in lower Manhattan, containing the terminals of railroad and steamship lines bringing food to the city, and the warehouses and stores of dealers of all kinds, and a few scattered terminals in the outlying boroughs, where a limited number of products are received and marketed. Then there are various secondary wholesale distributing points or "jobbing" markets, such as Harlem Market at East 102d Street for garden produce, Westchester Avenue and German Place in The Bronx for meats, butter, eggs, cheese, and some produce; and Wallabout Market in Brooklyn for all kinds of produce. Distribution in the city is effected by a series of makeshifts. Where it is possible marketing is conducted on the piers and terminals, and so in places we have the germ of the terminal market idea, but the terminals, as a rule, have not been constructed with this purpose in view and are by no means adequate for the amount of business that must be done. The only public market we have in Manhattan which is in any sense a terminal market is West Washington Market, but it has connection with only one railroad. The fact, however, that marketing is done in this way at all shows that the idea has a foundation in present conditions and has been worked out naturally by business men and is not something to be forced on the trade by theorists from outside.

The city's food supplies are brought in chiefly by the following agencies:

(1) Nine railroads: the New York Central, the New York, New Haven and Hartford, the Pennsylvania, the Erie, the Baltimore & Ohio, the Delaware, Lackawanna & Western, the Lehigh Valley, the Central Railroad of New Jersey, and the Long Island Railroad.

(2) Twenty-three steamship lines docking along the Manhattan waterfront, including the Old Dominion Line, the Clyde Line, and others.

Twenty-two steamship lines docking along the Brooklyn waterfront.

(3) Wagons from farms within a radius of forty miles coming to Gansevoort and Harlem Markets in Manhattan and Wallabout Market in Brooklyn. In the busiest season between 200 and 300 farm wagons come daily to Gansevoort and Harlem Markets each, and something over 400 to Wallabout. The amount they can bring seems inconsiderable when we consider that one railroad alone averages 100

carloads a day of food products the year round, and in the producing season brings between 300 and 400 carloads of produce daily to the market. The great expense of wagon transportation as compared with rail is a factor also that must be considered.

The New York Central Railroad is the only one whose tracks reach the Manhattan market district. The New Haven road comes into The Bronx, and the Long Island road into Long Island City, and both these have receiving piers in Manhattan on the East River. Marketing of a few products is done at the New Haven terminal in The Bronx and at terminals of the Long Island Railroad in Long Island City and Brooklyn. The other railroads have their terminals on the Jersey shore of the North River (except the Baltimore & Ohio in Staten Island), and maintain receiving piers in Manhattan on the North River, to which loaded cars are brought on floats. They have, however, no trackage facilities at these points. These roads also make carfloat deliveries where required, at terminals in The Bronx and Brooklyn. The Pennsylvania Railroad brings the greatest quantity of perishables to the city, its piers, Nos. 27, 28, and 29, forming a wholesale market for vegetables and fruits. The Erie brings in 95 per cent. of the California fruits coming here, which are sold at their piers at public auction. Live poultry is brought by other roads and very largely by the Delaware, Lackawanna & Western, the latter road making a specialty of improved cars for this business.

The goods that are brought over by these roads on carfloats are unloaded from the cars onto the piers and in many cases are sold there by the consignees and taken away by the buyers—jobbers and retailers. Otherwise they are trucked away by the consignees to be sold at their stores. This is an efficient way of doing business—that is, it is as efficient a way as the business can be done under the present conditions—but the space on the piers is insufficient to accommodate buyers, sellers, goods and trucks without great delays, which cause expense and considerable spoilage of goods, because the construction of the piers is, in most cases, not such as will protect the goods during the long delays from harmful temperatures and other bad weather conditions, and the city has now grown too great in size to depend on a primary market in only one borough. In seasons when the receipts are heavy it not infrequently happens that the congestion at the Manhattan terminals will hold back carloads of goods in the Jersey yards for days before they can be discharged for sale. Sometimes they are held back until they spoil and are a total loss to producer and consumer. There are now no markets organized in such a way that they can take this excess. This condition indicates how important it is to have satisfactory terminals as feeders for the retail markets of the city. A great saving and much more rapid movement of goods would be effected if the city had a system of terminal markets where loaded cars could be taken off of the floats and run into the market buildings, where the goods could be sold directly from the cars and delivered to the buyers with only one handling, and where goods shipped in refrigerator cars could be unloaded directly in favorable temperatures.

The present primary market in Manhattan is too congested and too far away from the rapidly growing outlying boroughs to be the base of supplies for the greater percentage of the retailers of the city. The time and labor of going to this market are too great and the dealers are forced to buy from the nearer jobbing centers. This lengthens the chain of middlemen and makes much trucking necessary. It is estimated that there are, on an average, over 1,000 trucks working in the market district daily, and that a truck must earn \$7 a day to pay for itself. This alone imposes a daily tax on our food supply of \$7,000, which does not include the cost of all the grocers' wagons that make daily trips of from 2 or 3 to 15 miles to reach the wholesale market.

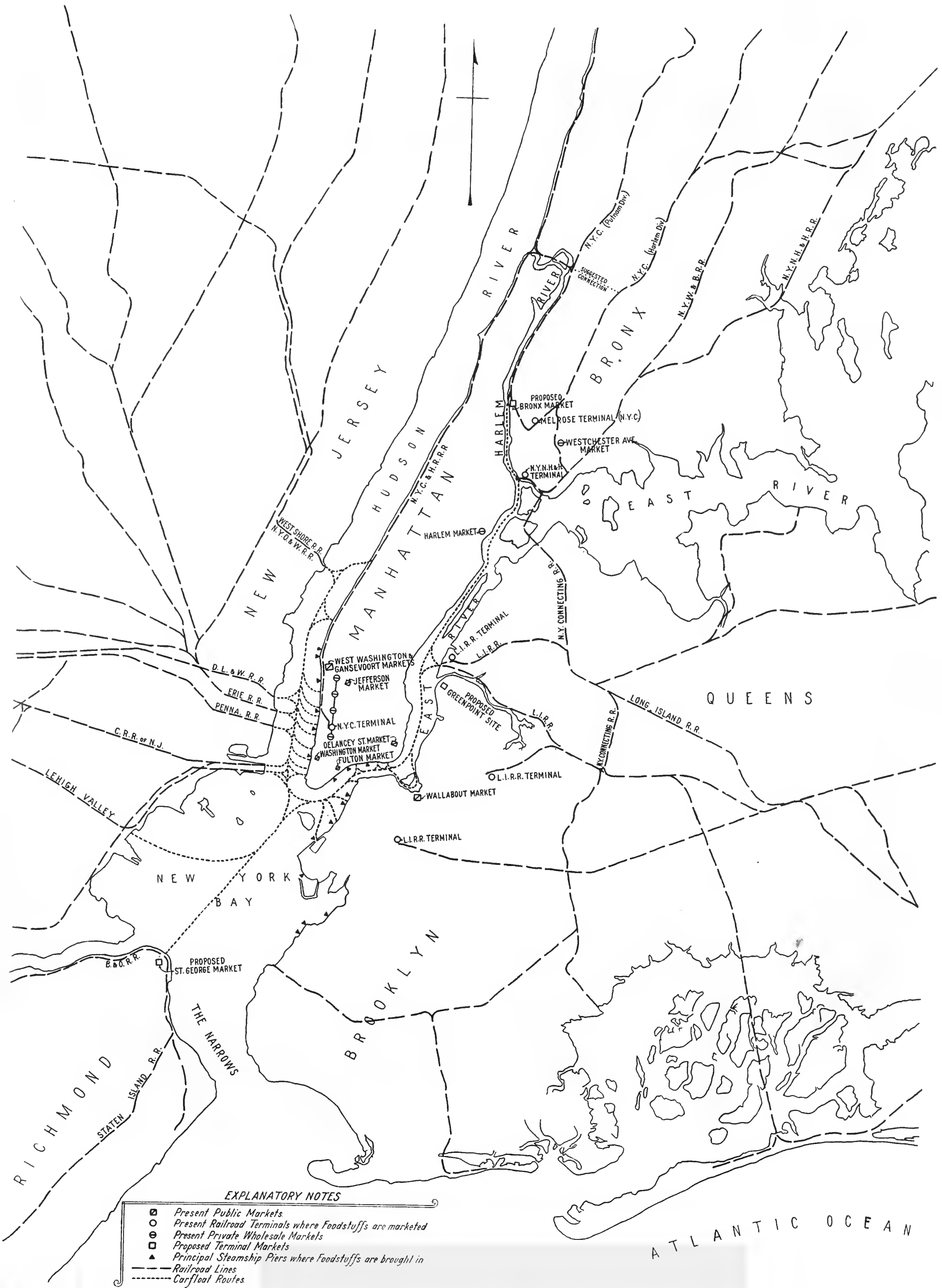
Wallabout Market is an important distributing center for Brooklyn, but the lack

of facilities for receiving consignments of freight prevents it from being more than a secondary market. Much of what is sold there is brought from Manhattan by truck and marketing is not done on the docks that they have. Trackage into the market would eliminate one extra handling of goods as well as facilitate the entrance of more goods and so encourage shippers to consign there.

Harlem Market at East 102d Street is centrally located for a vast population. It is the base of supplies for most uptown Manhattan and Bronx retailers. This is a privately owned market to which farmers come, chiefly from Long Island, crossing the 99th Street ferry from College Point. The charges for market wagons are somewhat higher than in Gansevoort Market, but quite as many farmers go there because the long haul downtown is saved. The market has no connection with any railroad or other transportation lines. In the Harlem Market itself most of the produce comes in by the farmers' wagons, but there has grown up in that immediate neighborhood a large center of produce commission men who get their produce in the usual way—by wagon from down town.

There is no distributing market whatever for the Borough of Richmond, though the presence of the Baltimore & Ohio terminal at St. George should make it easy to develop one. At present there are not even means to distribute to the dealers of the island the part that they need of what the island itself produces, more than is provided by the private transactions between individual growers and retailers. Beyond one or two commission men there, there are no means for wholesale distribution. It is impossible for the railroad to develop the car-lot business there without a terminal market to dispose of the goods. Wagons from the farms come up by the ferry to Gansevoort Market, and the retailers come up to the same district to buy. It is not unlikely that they sometimes buy Staten Island produce and truck it back again. They must, of course, buy in a market where there is variety enough to supply their needs.

The Borough of The Bronx is the most rapidly growing borough of the city and it has much undeveloped territory. Marketing facilities for this part of the city and for the communities to the north that draw their supplies from the New York market are almost non-existent. Two important railroads—the New York Central and the New York, New Haven & Hartford—run directly into the borough and have large terminals there, and the New York Connecting Bridge, now building, will bring in trains from the Pennsylvania system, but there is no modern market there where a dealer can find any variety of supplies. The New Haven has a small market building with 22 compartments at its terminal at 132d Street and Lincoln Avenue, but this road brings a limited number of commodities and the chief trade at this point is in Maine potatoes. The New York Central permits marketing from the cars in its Melrose yard at 158th Street and Morris Avenue and a considerable variety of produce is to be found there. At Westchester Avenue and German Place there is a small aggregation of commission dealers and branches of the meat packing houses, but nothing that constitutes a modern market. The dealers for the most part draw their supplies from the jobbers and wholesalers in Harlem and Gansevoort Markets, and from these points all goods are trucked out to the borough. Even fish, which is brought down through the borough in large quantities by the New Haven road, is all lightered from the railroad terminal to the Fulton Market district and there sold at wholesale, and what is used in The Bronx must be trucked up from there. Produce brought down by the New York Central is also taken through the borough down on the west side tracks to the Gansevoort Market district, and anything used in The Bronx must be taken back by truck. Several other railroads have car-float terminals in the borough, but shippers do not consign food products there because there is no market to dispose of them.



VII. PRESENT PUBLIC MARKETS.

The present public markets of the city are: West Washington, Gansevoort, Fulton, Washington, Jefferson and Delancey Street, in Manhattan; Wallabout, in Brooklyn. They can hardly be said to constitute a system at all and do not meet the needs of present conditions. A brief description of them will show how little the city has done up to this time toward handling the provisioning of the city and considering its problems in a large way.

FULTON MARKET

Fulton Market is located at Fulton and South Streets, where it was established in 1821. It is a one-story building about 200 x 170 feet, in which are sold meat, vegetables, and fish. It is chiefly known for its fish trade, as it is immediately across the street from the wholesale market of the Fish Mongers' Association on the East River waterfront. Years ago the market was patronized largely by people living in the neighborhood and by those who went home by way of Fulton Ferry; it is now, however, so far away from residential neighborhoods and from the traffic lines that it has practically no retail trade. It is mainly a jobbing market, supplying steamships and hotels. It has no connection with any transportation line, supplies being brought to it entirely by truck. The physical condition of the market is very poor, and it is estimated that it would cost \$60,000 to put it in proper condition. The Board of Health now has a violation against it because of its unsanitary condition.

Space in the market now rents for \$1.41 per square foot per year. An estimate of the total income and costs shows an average yearly expense to taxpayers for the last three years of \$1,075 for maintaining this market, with an actual profit in 1912 of \$63.78. The fact that there is now no demand for stands in the market and many are vacant, and that it would be necessary to spend at least \$60,000 to put the market in proper condition, on which investment there is no prospect of return, and the lack of any evidence that the continuance of the market is of any benefit, direct or indirect, to the public, would seem to indicate that Fulton Market has outlived its usefulness and should be discontinued.

WASHINGTON MARKET

Washington Market is located at Fulton and West Streets and covers an area of about 175 x 203 feet. It was established in 1812. It is a jobbing and retail market of the same general character as Fulton, but the building is in much better condition and it has more business. Meat, fish and game, butter, eggs, cheese, fruits, and vegetables are sold there. It is much nearer the primary markets, except for fish, than Fulton Market. Washington Market is not on any transportation terminal and contains no space or facilities for cold storage other than the iceboxes of the dealers.

The building is in fair condition, \$40,000 having been spent on it in repairs in 1911. In producing an adequate return on the money invested it is at a disadvantage in the fact that it is only a one-story building. The ground rent there is high and there is only the one floor to produce revenue. Space in the market rents for about \$1.40 per square foot per year. There is competition for stands there because the business is good. The rate has always been flat for all locations, but some places in the market are so much more advantageous for trade than others that a reapportioning of the rentals is now being worked out which will increase the income on the market by about \$7,000 a year.

The average cost to taxpayers on Washington Market for the last three years,

exclusive of \$37,000 for repairs in 1911, has been \$18,380. The City would not, we think, be justified in continuing the market were it not that the market was put in fair condition in 1911 and plans are now under way to put it in first-class condition and make it self-supporting. This market, too, performs a useful function as a base of supplies for many of the restaurants of the downtown section, where many hundred thousand people get one meal a day, and it has a large trade with many families accustomed for years to dealing there. It is not, however, accessible to any large percentage of the consumers of the city, and the prices there have no effect on retail prices throughout the city.

JEFFERSON MARKET

Jefferson Market is located at the corner of Greenwich Street and Sixth Avenue and occupies about 36,000 square feet. It is about a mile from the wholesale markets and its trade is mostly retail. If a public retail market of this type can be successful this one should be. It is in a thickly settled section, with a large industrial population on the west and the wealthier people of the Washington Square section on the east. The trade in the market, however, is not large and is mainly with the people on the east. Prices in the market, as compared with those in private stores in the neighborhood, are high. The market is valued at \$190,000 and space in it rents for about \$1.00 a square foot. The average cost to the taxpayers for this market has been about \$5,000 a year for the past three years. It is difficult to see any justification under these circumstances for the city's continuing the market, which does not serve the general public.

WEST WASHINGTON MARKET

West Washington Market was established in 1889 at Gansevoort and West Streets and covers an area 369 x 400 feet. There are ten buildings—two-story structures built in blocks of twenty stands each, with marketing space on the first floor and offices on the second. The buildings are in fair condition. The assessed valuation of the market is \$1,100,000 and it pays the city a profit over all costs of over \$30,000 a year. It is entirely a wholesale market, in which meat, garden produce, and live poultry are sold. The largest sales are in live poultry.

The market is on the water front but has no facilities for receiving goods by water. It receives a good deal by rail. The dealers in the market are, as a rule, direct consignees. The stalls in the market average in size from 12 x 18 to 18 x 25 feet, and rent for about \$150 a year. They are fully occupied. When one becomes vacant it is put up at auction and sold to the highest bidder. When the occupant of a stand dies the stand is no longer transmitted as part of his estate, as was allowed formerly, and the practice of sub-letting stands at high rentals has been stopped.

This market supplies the whole city with live poultry. It is not unusual for a single dealer to handle five carloads of live poultry in a day. The market has no connection with any railroad but the New York Central, goods from other roads being brought to it by truck. The dealers sometimes sell their goods in the Jersey yards and sometimes sell at the market without unloading from the truck. There is more business done here than in any other of the city's markets.

GANSEVOORT MARKET

Gansevoort Market is an open market square, bounded by West, Little West 12th, Washington, and Gansevoort Streets. It has no buildings of any kind. It is by legislation restricted to the use of farmers and gardeners for the sale of products

they themselves have grown. Each man is charged a fee of 25 cents daily. The assessed valuation of the land is \$850,000 and the average annual loss on the market to the city is \$40,000. The farmers drive in to this market from a radius of forty miles around the city, mostly from Long Island. In the season there are from 200 to 300 daily. They take their places in the evening, stable their horses in the neighborhood, and sell in the early morning hours, from three or four o'clock on. There is no protection of any kind from bad weather conditions.

The market is not large enough to be very elastic. There is often a surplus of goods not in demand by the buyers there that will sell for next to nothing because there are no means of getting it to other buyers. It does not pay the farmer in his busy season to stay all day in the market; he needs the time on his farm and is better off if he can sell his stuff quickly in bulk to a wholesaler. The number of farmers to make use of such a market as Gansevoort is not likely to increase, as farm lands are all the time being crowded farther and farther away from the city. It is doubtful if there is enough benefit conferred on anybody by this market to warrant devoting such a valuable piece of property exclusively to this purpose, at such an expense to the city at large. Provision could be made in any new market buildings that are planned for the farmers' market, where there would be better protection to the market and less expense to the city.

DELANCEY STREET MARKET

The Delancey Street Market is a pushcart market located under the approach to Williamsburgh Bridge at Pitt and Willett Streets, where fish, vegetables, and fruits, and miscellaneous dry goods are sold. It occupies space 400 x 100 feet which is not rentable for any other purpose. It was established to give the poor people of the neighborhood a market with as little overhead expense as possible. There is no building, the only protection to the market being the bridge structure. In the fish market places rent for from \$1 to \$2 a week, according to location. There is competition for vacant places, the applicants drawing lots for them. In the rest of the market a fee of 25 cents a day is charged for each cart. Plans are under way to improve the market by putting in a new floor and lighting with electricity. As the maintenance expense is low and no charge is made against the market for interest or exemption from taxation, the land being of no value for any other purpose, the net profit to the city on this market last year was \$10,000.

There is more land under the bridge approach at this point that is now vacant and of use for no other purpose, which offers a possible site for a live poultry market, should it be decided to move that trade from West Washington Market. The bulk of the live poultry is now sold in New Jersey and trucked over and could as easily be brought to one place as the other, and for anything coming by water there is good dockage at the foot of Delancey Street.

WALLABOUT MARKET

Wallabout Market in Brooklyn has an area of about 36 acres, of irregular shape. It is located on lands formerly owned by the Federal Government, extending from Clinton Avenue to East Avenue, to Wallabout Basin. In this market the city owns the land and the ground is leased out in lots to individuals, on ten-year leases, with a renewal of ten years at the expiration of that time, after appraisal. They build on the sites two-story buildings, which must conform in architecture to the plans of the buildings in the market, which they occupy or sublet, as the case may be, and on which they pay taxes to the city. The lots average in size 25 x 50 feet. The assessed valuation of the market property is \$1,150,000. The average yearly net

return to the city, taking into account the amount received in taxes on the buildings, is \$8,000. The average ground rent per stand is \$17 a month. The valuation here given does not include the bulkhead property, which is under the control of the Dock Department, and which yields a large return in dock rents. There are over 100 lots in the market still unoccupied, which, when taken up, will add considerably to the return to the city.

The streets in the market are well paved and wide, ranging from 45 to 100 feet in width. On Washington Avenue there is a trolley line connecting to all points in Brooklyn. There are also a number of carlines on Flushing Avenue, which leads from the market to the business center of Brooklyn; it is one of the main arteries of traffic east and west.

There are terminal facilities on the canal and on the Wallabout Basin, where piers are maintained by the New York Central, Lehigh Valley, Baltimore & Ohio, West Shore and Pennsylvania Railroads. The Delaware, Lackawanna & Western has a terminal and yard immediately adjoining the market. There are no truckage facilities in the market, so that it is impossible to sell goods from the cars. Cars that are lightered there are brought into the slip only and their contents must be trucked into the market. If there were track connections it would be an easy matter to run the cars right into the market, and one intermediate handling would be saved. There is now much trucking of goods over from New York; all the Florida fruit is trucked over; all the fresh vegetables coming in the winter time on the Old Dominion Line are trucked over. Wallabout Basin is deep enough now for tugs and lighters, but will have to be dredged before vessels of any size can come in.

A great many farmers drive in to Wallabout Market from a radius of 40 miles around New York. Each wagon pays 25 cents a day for space in the open market square. The highest number of wagons to come in any one day in 1912 was 445.

There is no fish market there at the present time and the market has no refrigerating plant. Cold storage is supplied by an outside company and no ice is used. Sales in the market are entirely private; there are no auctions. Wallabout Market is a very good distributing market now and is located conveniently for the dealers; it could, however, be greatly improved by the addition of railroad tracks and a refrigerating plant, so that goods could be brought into the market without change of temperature and much waste saved.

VIII. PROPOSED MARKET SYSTEM FOR THE CITY

The foregoing analysis of present conditions should make clear the fact that the marketing of farm products in this city to-day is a problem of distribution from transportation terminals; it can be made efficient only by the coördination of the collection, transportation, and distribution of foodstuffs. In other words, we must develop the type of market here that will make for the quickest receipt and disposal of goods. We must educate shippers to the advantages and needs of this market and the methods to be employed by them to ensure quick marketing of their goods, and the buying public here to watch market conditions so that they may buy more intelligently and so that there may be popular demand for the goods that are plentiful. Only a market which distributes foodstuffs quickly and economically will encourage producers to ship to it.

A study of the geography of the city, the present conditions and methods of marketing, i. e., congestion at downtown terminals, inadequacy of present terminals, amount of trucking and long truck hauls necessary, etc., the difficulties that confront shippers, and the forces that now operate to keep goods from reaching our market, points to the conclusion that the establishment of large terminal wholesale markets

in the five boroughs of the city is the first essential step in the bettering of conditions. We have in this city two distinct problems—the problem of the primary or wholesale marketing of the goods when they reach the city in large unbroken lots, and the problem of retail distribution.

Though investigation shows the largest increase in prices to be added by retailing, it also shows that the greatest hindrances to efficient distribution exist in the wholesale marketing of the food products received here. Part of the high cost of retailing is due to the quantity and kind of service that the business demands, as compared with wholesaling, and part is due to a lack of responsiveness of retail markets to conditions of supply, because of the chaotic condition of the present wholesale market. Producer and consumer are not kept far apart now by the retailers to any such degree as they are by the cumbersome methods of wholesaling. We have in the city a large number of small grocery and provision stores which serve the people very well. They cater to the needs of their regular customers and are convenient supply depots for apartment house dwellers who have no room to store supplies and wish to buy often and nearby. A type of municipal retail market that can compete with these neighborhood stores has yet to be developed.

Consumers as a class are intensely conservative and slow to change established habits. If they are used to marketing in a certain way at certain kinds of stores, they are not easily induced to change. It would be useless to spend public moneys on a system of retail municipal markets, the success of which would depend upon a considerable change in the habits of the buying public and in the aims of marketmen. The possibility that the city could offer space in its retail markets to dealers at lower rents than those demanded in other buildings does not necessarily mean that for that reason the dealers would sell goods cheaply. On the contrary, their low rents, and the necessarily higher prices outside, would give them a chance for a profit which previous experience indicates they would not share willingly with the public. This condition was found to prevail in one of the retail markets of Berlin. It is difficult to see how it could be avoided in a public retail market unless the city itself, through its employees, went into the actual buying and selling of food in the markets, or attempted a system of price regulation—practices whose desirability is questionable. Retail prices will be lowered when all are given facilities for buying cheaply and when the forces of demand and supply are given free play.

Systems of municipal retail markets have not been a success where tried in large cities under conditions similar to our own. In Berlin 12 markets out of a system of 14 have been abandoned. They have been gradually given up and the buildings turned over to other uses. The same thing has happened in Paris, where out of an original system of 33 only half are now in operation. Only those in direct connection with the terminal markets have been found to be of value. The case of Jefferson Market in New York is typical of what happens here and elsewhere with this type of market. The trade in Fulton and Washington Markets is becoming more and more a jobbing trade and less a retail trade—supplying large customers like boarding-houses, hotels, and restaurants. The most flourishing public market we have now is West Washington, which is a wholesale market, and, in a way, a terminal market, though its possibilities as such in the way of waterfront development and railroad connection have not been made full use of. As it is it pays the city a profit of \$34,000 annually on the investment.

Whatever form the retail distribution here eventually takes—whether it be private stores, municipal markets, coöperative stores, or what not, it will be essential to have a large, well-organized wholesale market in each borough. That is the first step. The type of retail distributor is of little importance if it has difficulty in getting supplies.

The idea of wholesale terminal markets is not new outside of New York; it is not

new in New York, but it has yet to be recognized and applied here in a large way. In Berlin they have had a wholesale terminal market for over twenty years, the only fault being that it is not now large enough to accommodate the trade that seeks it; they have one in Munich, in Frankfort, London, and other cities abroad. It is the recognized type of municipal market in the larger cities of Germany, where they have given the subject close study. Its effectiveness lies in the fact that such a market cuts out unnecessary steps—it does not introduce radical changes in business methods, but rather gives business men the means for more efficient service. It is axiomatic that business is conservative and slow to change its methods and habits. We recognize the futility of proposing radical changes theoretically alluring or untried methods that will meet with distrust.

The lack of system in the wholesale marketing here to-day is a handicap to efficient service and a cause of great expense. This expense is of three kinds: one, the actual cost added to the goods for the trucking and rehandling necessary; two, the loss of goods deteriorated through exposure to harmful temperatures after unloading from the cars or through bruising in being handled many times; and, three, the loss of goods kept from market because of the lack of facilities. These three factors would be eliminated in proper terminal markets. It is likely also that in time the expense and loss in regrading goods would be reduced as the market management makes known throughout the producing sections the methods of grading and marking most advantageous in the market.

The distribution of food in the city to-day, as has been shown, takes place chiefly from the primary market in lower Manhattan. While it is true that in most places the ideal condition is to have the wholesale marketing done in one place, where all buyers and sellers may congregate, and that a division of the wholesale market results in a loss in economy, the results of the policy of concentration that confront us to-day in New York lead to the conclusion that greater economy will be effected in this city by a division of the primary market among the five boroughs. New York City is divided by natural waterways and political lines into what are practically five cities. It has grown too large to depend on one market, and the trade in that market has grown to such proportions that we could hardly build a terminal market large enough to accommodate it without congestion. Even if we could, it would not do away with the necessity of having jobbers' markets to reach out to the retailers in outlying sections, and the latter would be brought no nearer the sources of supply. We believe, also, that, for the present at least, the number of such markets should be restricted to one for each borough, so that each may be assured of as large a supply as possible and may attract as large a number of buyers as possible.

These wholesale terminal markets should be what their name implies—markets on the terminals of as many transit lines as possible, so that they will be supplied with a full range of commodities. They should be union freight terminals with modern marketing facilities. No one railroad brings a great enough variety of products to supply a market with all lines. They should have sufficient space for handling cars from different lines with dispatch. Refrigeration should be provided for both temporary and long storage, and there should be refrigerated rooms into which refrigerated cars could discharge their contents without change of temperature and consequent injury to the goods. The handling of produce should be by machinery as far as possible. Separate parts of the markets should be devoted to the sale of different products, but the market should be so arranged that a dealer could buy his various supplies without going too far. Connected with each market should be a post office, bank, telegraph office, public telephone, restaurant, infirmary, and comfort station. Of course, many details must be left for future elaboration, but it is probable that economy will be effected by having a delivery service by automobile trucks

belonging to the market. Each market should also have a retail department and a canning and preserving plant.

A prominent feature of nearly all foreign municipal wholesale markets is the provision for sales at auction of all goods consigned directly to the market, conducted by bonded auctioneers licensed by the city. Such sales are not provided for in any of our public markets at present—there are no markets to which shippers can now consign directly; they must send goods to individual dealers. The auction method is now used here in disposing of California fruits and some few other products, and has recently been introduced into the live poultry trade.

The terminal markets should be self-supporting, the rents charged being sufficient to pay interest on the money invested and a sinking fund, and to cover the loss on the property by exemption from taxation. The markets should not be operated with the purpose of making them a source of revenue to the city, but every effort should be made to have them operated in such a way that the costs of distribution shall be minimized and prices kept at normal levels.

A system cannot hold together or work for a definite purpose unless it is organized and its control vested in a competent executive body. Too many city departments now have authority over the markets. Their powers should be vested in one Department of Markets, to be created by amendment of the Charter. The control is now so split up that (1) the Board of Aldermen has charge of the selection of sites; (2) the Borough President has charge of maintenance; (3) the Department of Finance collects the rents; (4) the Department of Health has charge of the sanitary conditions of the markets and the inspection of food; (5) the Fire Department takes measures for protection from fire; (6) the Police Department makes traffic regulations, etc.; (7) the Bureau of Weights and Measures has its authority; and (8) the Department of Docks and Ferries collects dock rents where markets are on the water front. These functions should be centered in one Department, which should exercise supervision over the entire marketing system of the city. It should keep a record of all goods received and sold at the markets, maintain a system of inspection of foodstuffs, issue bulletins of supplies received and market prices, establish standard requirements for packing and grading, etc.

The executive functions of such a Department of Markets should be vested in a Board of Market Commissioners, one from each borough, to be appointed by the Borough President, to serve for a term of years or during good behavior, such Board to choose its own chairman. Such Market Commissioners, as well as the market auctioneers, should be forbidden to have any personal interest in the business done in the markets.

There are within a radius of a few hundred miles of New York many small farmers on whom present conditions are a heavy burden. On their farms quantities of foodstuffs go to waste every year because the cost of getting them to market is too great. From some places distant for passengers only two hours from New York it takes from ten days to two weeks to get freight here. This is too long a time for perishable products and there is no advantage in sending by express as the rates are too high. In many cases, too, the farmer does not know a reliable dealer to whom to ship. The terminal markets with their auction sales will open the way for these goods to reach the city. As soon as they are in operation it will be possible for the railroads that reach out through the nearby territory to run daily produce trains as they now run milk trains, to which farmers may take produce in any quantities to be sold in the markets at auction, or otherwise, as desired. They cannot do this now as there are no means of disposing of the goods when they reach the city, unless they are consigned to dealers.

Your Commission has prepared plans for such a market as has been described, to be constructed in the Borough of The Bronx, based on carefully computed estimates

of present and future consumption in the territory such a market will serve. (For detailed description, see Appendix.) This market will cover 28 acres and will cost, with the land, in the neighborhood of \$10,000,000. At an average annual rental of 35 cents per square foot of rentable space, it will return seven per cent. on the investment—more than sufficient to pay all the charges of the undertaking. Rental rates in present public and private markets are much higher and the facilities offered much less. The plans include a freight yard with ample unloading platforms; broad driveways for trucks, so arranged that incoming and outgoing traffic will not conflict; selling and storage space; auction rooms; power house; retail market; and ample waterfront facilities.

IX. RECOMMENDATIONS

Your Commission recommends the establishment of a wholesale terminal market in each of the boroughs of the city as follows:

MANHATTAN

In the neighborhood of West Washington and Gansevoort Markets. It will be necessary to plan this market so that the railroads coming to New York can coordinate to run their cars into it and have their freight handled with celerity. The plan proposed for the West Side Terminal Improvement, although mainly devoted to the New York Central and Hudson River Railroad, includes a reservation by the City of tracks for other railroads as well. It might be that, if the location of the Manhattan wholesale market were to be made for the first time, a site further north in the neighborhood of 50th Street would be selected, but trade is very reluctant to move, and the fact that the banks, cold storage warehouses, and present business of the trade are located in this neighborhood makes the plan to take the market away from this location impractical. Besides that, outgoing steamers and trains must be supplied and the erection of high buildings in the lower end of Manhattan containing a very large population, which must be fed at least once a day, makes it desirable that a market should be located in their vicinity. The plan suggested by the Gansevoort Market Business Men's Association and others seems a good one, but it was based on the idea that the present West Washington Market was to be taken for steamship piers. Under the law it was the duty of the City to provide another market site in the Ninth Ward of the City of New York. If the plan to take West Washington Market for steamship piers is abandoned, the present West Washington and Gansevoort Market sites could be combined and, with some additional property, make an excellent site for a new market at small expense. It should be decided at once which of these plans is to be adopted. The need of the market is very pressing and work should be begun upon one or the other plan at once.

BROOKLYN

Brooklyn has a most excellent market in Wallabout Market. It has 36 acres of land and is located on the waterfront. At present carfloat connections bring loaded freight cars to it, but there are no trackage facilities to take them into it. Possibly in the future it will have direct rail communication by land. Broad streets lead from it and it is within easy distance by automobile truck of any part of the borough. At comparatively small expense the improvements necessary to make a modern market could be made—namely, to dredge out the Wallabout Basin so that loaded vessels of size could come into it, to erect a cold storage plant sufficient for the needs of the market, to lay railroad tracks on Clinton Avenue so that loaded cars

may be run directly into the market, increasing its freight capacity and eliminating the trucking of goods from dock to store, and to construct a retail annex. Your Commission recommends that these improvements be made.

GREENPOINT OR LONG ISLAND CITY

A site for a market has been urged by the Greenpoint Taxpayers and Citizens' Association at Greenpoint, near the proposed Barge Terminal. The plot is nine acres in size. At present it would have to depend upon carfloat connections for supplies brought by rail, but that might be remedied by a marginal railroad if a market were located there. The question of whether a market in that neighborhood should be located at Greenpoint or in Long Island City must be determined by the local authorities. A market in Long Island City would have the benefit of direct rail connections with the Pennsylvania-Long Island railroad system and the New Haven Railroad over the Hell Gate Bridge and the New York Connecting Railway. For that reason your Commission recommends the choice of a site in Long Island City, but thinks that the local authorities of both places should be consulted in the matter.

THE BRONX

Your Commission begs leave to submit plans for a market in The Bronx, which it has prepared to serve as a model for markets throughout the city. It is recognized that each market must be modified in form to meet existing conditions, but the principle of the coördination of railroad and waterfront facilities will obtain for all the markets.

The market is planned to cover 28 acres of ground. It will cost, for the land, about \$2,000,000, and, for the buildings, about \$7,850,000. It is estimated that at a rental of 35 cents per square foot of rentable space it will return 7 per cent. on the investment. It will serve the population of Harlem from 110th Street north—with about 800,000 people; The Bronx, with about 600,000 people; and New Rochelle, Mt. Vernon, and Yonkers.

Your Commission recommends that steps be taken at once toward the construction of this market.

RICHMOND

A site in the neighborhood of St. George, Staten Island, is recommended for the Richmond market. A great deal of the produce consumed in the Borough of Richmond is grown there during certain period of the year and could be collected and sold in the market. It has good railroad facilities, which are likely to be improved in the future.

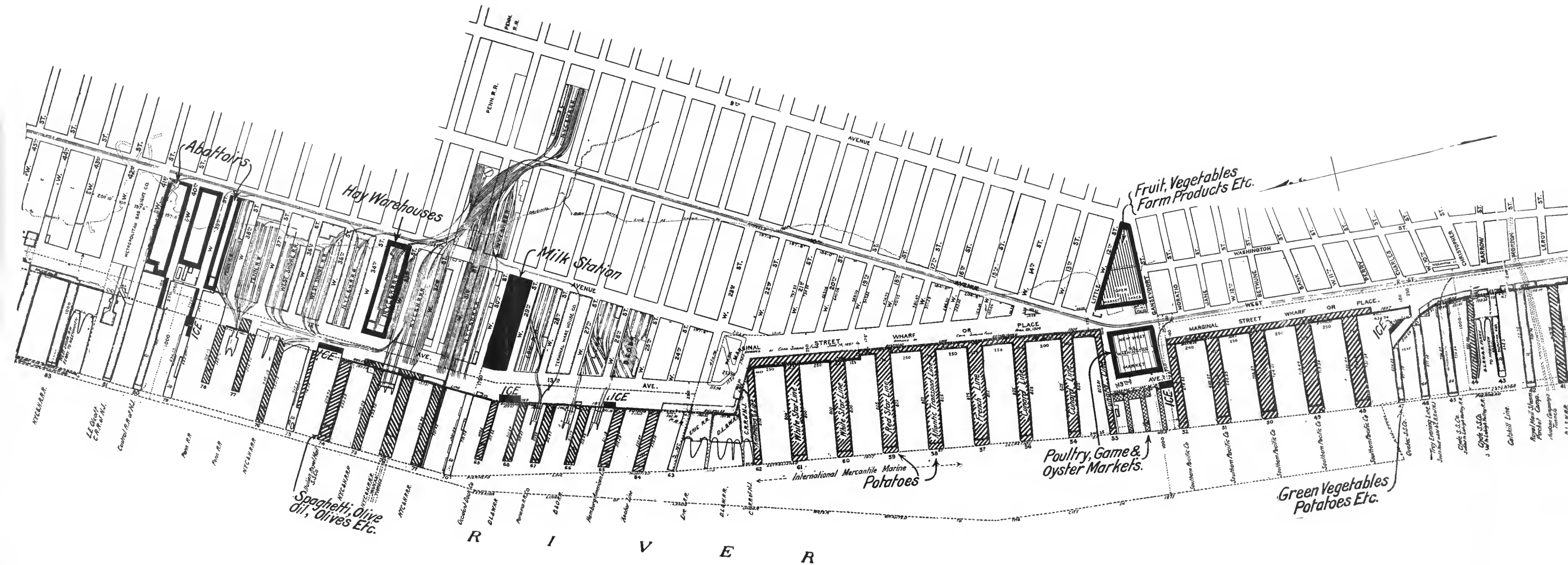
DEPARTMENT OF MARKETS

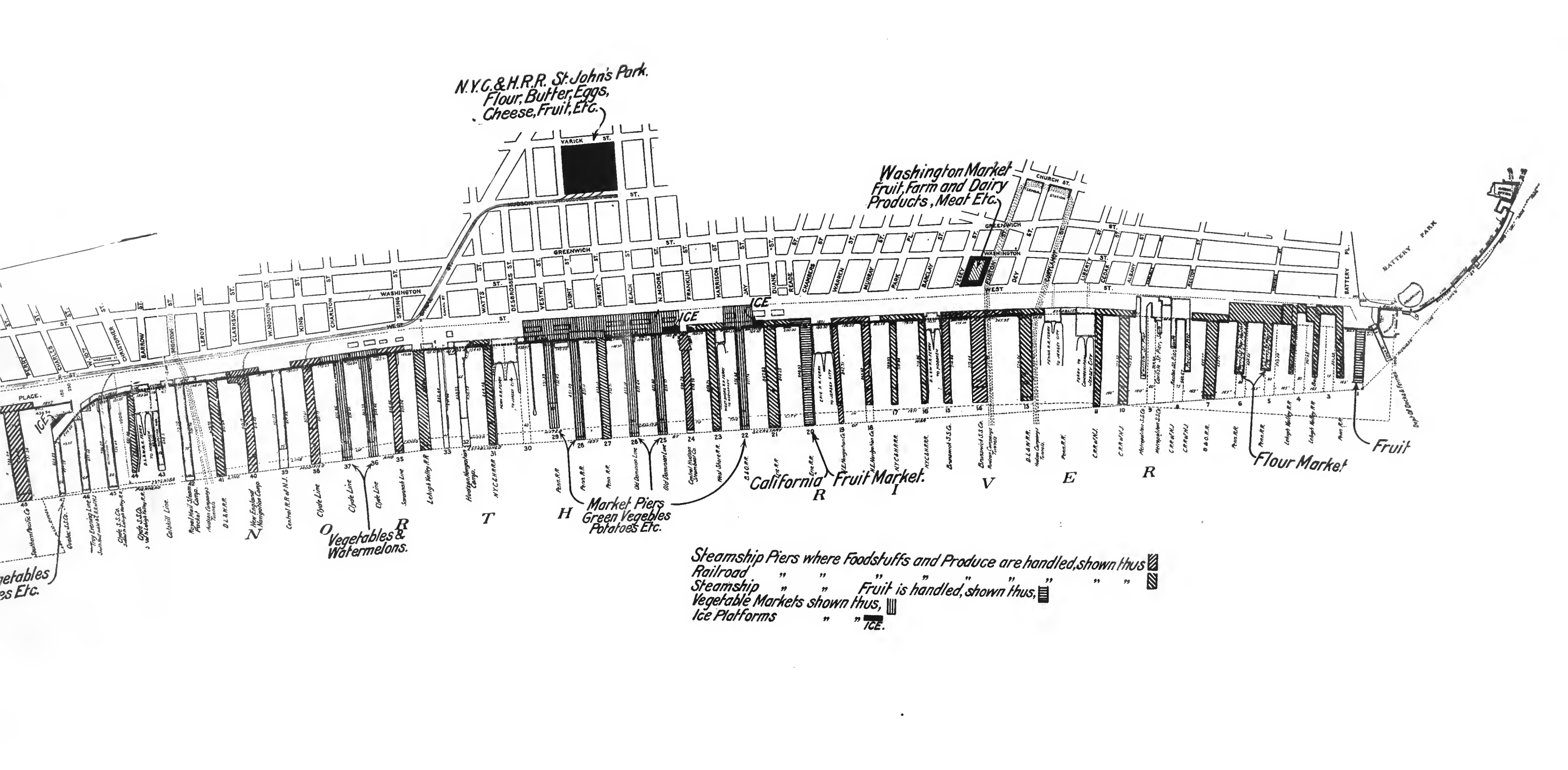
Your Commission recommends that a new Department of Markets of the City be created to supervise the food distribution in the city; that the control of such Department be vested in a Board of five Market Commissioners, one for each Borough, to be appointed by the Borough Presidents, such Board to choose its own chairman; that the jurisdiction over the city's markets now vested in other departments be centered in the new Department of Markets.

AUCTION SALES

It is recommended that sales at auction be made permissive in the several public markets. They should be conducted by bonded auctioneers, licensed by the city, to whom goods could be consigned by persons who desired to sell their goods at auction.

It is not supposed that a very large percentage of the goods coming to the market would be sold in this way, because many shippers would prefer to do business through private dealers, but the fact that such sales could be made would tend to steady prices; such auction sales would also serve to fix the market prices for each day. It is recognized that the great bulk of certain kinds of perishable goods must be sold within a few hours after the opening of the market, and that it would not be feasible to auction them all off in sufficiently small quantities. The existence of the auctioneers, however, would make it possible for the grower who had no private consignee to send his goods to the market and have them sold by the public auctioneer.





N.Y.C. & H.R.R. St. John's Park.
Flour, Butter, Eggs,
Cheese, Fruit, Etc.

Washington Market
Fruit, Farm and Dairy
Products, Meat Etc.

California Fruit Market.

Flour Market

Fruit

Vegetables & Watermelons.

Market Piers
Green Vegetables
Potatoes Etc.

Steamship Piers where Foodstuffs and Produce are handled, shown thus
Railroad " " " " " " " " " " " "
Steamship " " " " " " " " " " " "
Vegetable Markets shown thus, " " " " " " " " " " " "
Ice Platforms " " " " " " " " " " " "

I. EXISTING STEAMSHIP AND RAILROAD TERMINALS IN THE CITY OF NEW YORK

By

W. G. RAINSFORD

Assistant Superintendent of Docks

I have interviewed a number of the agents and managers of the larger railroad and steamship companies operating on the New York water front, with a view of securing from them such information as they had at hand relating to the importation of food supplies into the City of New York and the methods employed by them in transferring these food supplies from the piers and warehouses to the wholesale dealers or consignees.

The railroad and steamship companies, being common carriers, have no interest in the commodities they handle except to deliver the goods safely at the stations called for by the bill of lading, receiving therefor the tariff rate fixed by the Trunk Line Association from stated points to the Atlantic seaboard, this rate allowing for storage on the various docks of the railroads, varying from twenty-four hours for perishable freight to three days (exclusive of the day of arrival) on canned goods and other package freight, after which time, if the space be required for incoming freight and after advice to the consignee, the goods are rodded to storage at the expense of the consignee. On carload lots the railroad company is compelled by law to keep the shipments in storage at Jersey City for a period of ten days, and, if required by the consignee, to deliver same by lighter to any point within lighterage limits of the greater city without additional compensation.

All food stuffs and other commodities are removed from the piers and warehouses of the railroad and steamship companies by drays, some of the large wholesale grocers and provision dealers using their own teams for this purpose, while a considerable number hire outsiders to do this work, the usual rate for a double team being \$8.00 per day, or 60 cents per ton when taken by weight.

While the cost of nearly all food stuffs has advanced enormously during the last ten years, I do not find that the freight rates have correspondingly increased during the same period, the rates in many instances being the same and in some cases less, due, no doubt, to the rigorous supervision of the Interstate Commerce Commission and to competition.

The steamship companies, while not coming under the supervision of the Interstate Commerce Commission, have to meet the established rates of the railroads or do a little better to get a fair share of the business, the cost for handling being about the same in both cases. Outside of perishable freight, the steamship companies handling domestic products allow, on the average, five days for the removal of cargo, the goods being left there entirely at the risk of the consignee.

The section of the water front known as the Vegetable Market includes the Baltimore & Ohio pier No. 22, foot of Jay street; Old Dominion piers Nos. 25 and 26, between North Moore and Beach streets, N. R.; the Pennsylvania Railroad piers

Nos. 27 to 29, between Hubert and Desbrosses streets; the Clyde Steamship piers Nos. 35 and 36, at Spring and Charlton Streets, respectively; the Mallory Steamship pier No. 38, at the foot of King street, N. R., and Pier No. 47 and sheds adjoining, under permit to the Quebec Steamship Company, at the foot of Perry street, N. R.

In the spring of the year (March to July, inclusive), between the hours of 1 and 10 A. M., this whole area is devoted almost entirely to the handling and disposition of green vegetables and fruit. These commodities are sent over the river on floats from the Jersey terminals and transferred from the cars to the several spaces on the pier bulkhead assigned by the railroad company to the dealer for the sale and disposition of his products. The Old Dominion Steamship Company regulates the arrival of its steamers to agree with the unloading time of the railroads, and assigns similar spaces on its piers to the commission merchant for the disposal of his merchandise. A joint market for green vegetables is thus established on the piers and bulkheads above referred to, the opening hour of the market being 1 A. M., in the busy season. All of the green vegetables are shipped to New York in crates, baskets, or barrels. For such green vegetables as are not crated, storage yards and unloading platforms are provided by the railroads on the upland from Twenty-sixth Street to Thirty-seventh Street, inclusive, where produce in carload lots is unloaded.

The Pennsylvania Railroad Company averages each month about 35,000 tons of green vegetables and fruit, besides 3,000 tons of butter, 3,000 tons of eggs in cases, 600 tons of dressed poultry, 2,900 tons of canned goods, 165 tons of cereals, and 414 tons of flour, from March to July, inclusive, at its station No. 29, above referred to. This railroad also has other piers where all classes of foodstuffs are received, except green vegetables, namely, Old Piers Nos. 1, 4, and 5, between Battery Place and Morris Street; Piers 77 and 78, at the foot of Thirty-seventh and Thirty-eighth Streets, N. R., as well as a long bulkhead north of 125th Street, E. R., and Pier No. 2 and bulkheads adjoining the Wallabout district, Brooklyn.

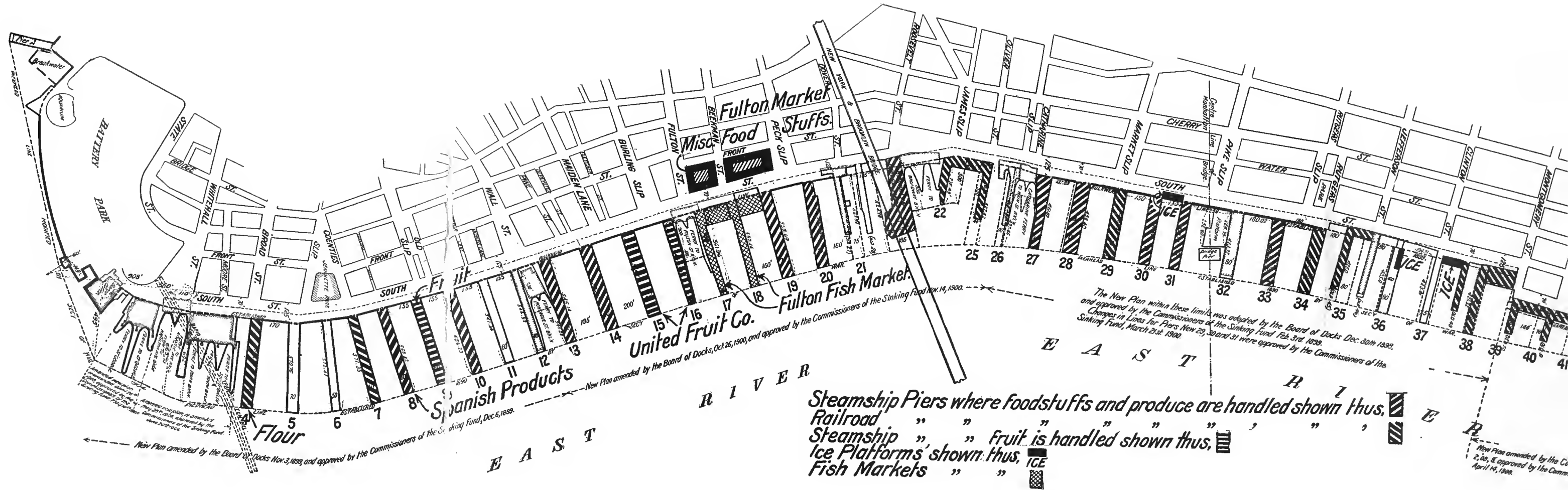
The Baltimore & Ohio Railroad, operating through the same section of the country, also brings in large quantities of green vegetables to New York, its market being located on Pier No. 22, at the foot of Jay Street, N. R. This railroad also handles large quantities of dairy products, considerable canned goods, some cereals, and a quantity of flour. Other stations of the Baltimore & Ohio are located at Pier No. 7, N. R., foot of Rector Street, and on the south side of Pier 66, N. R., foot of Twenty-sixth Street, where all classes of foodstuffs are handled except green vegetables.

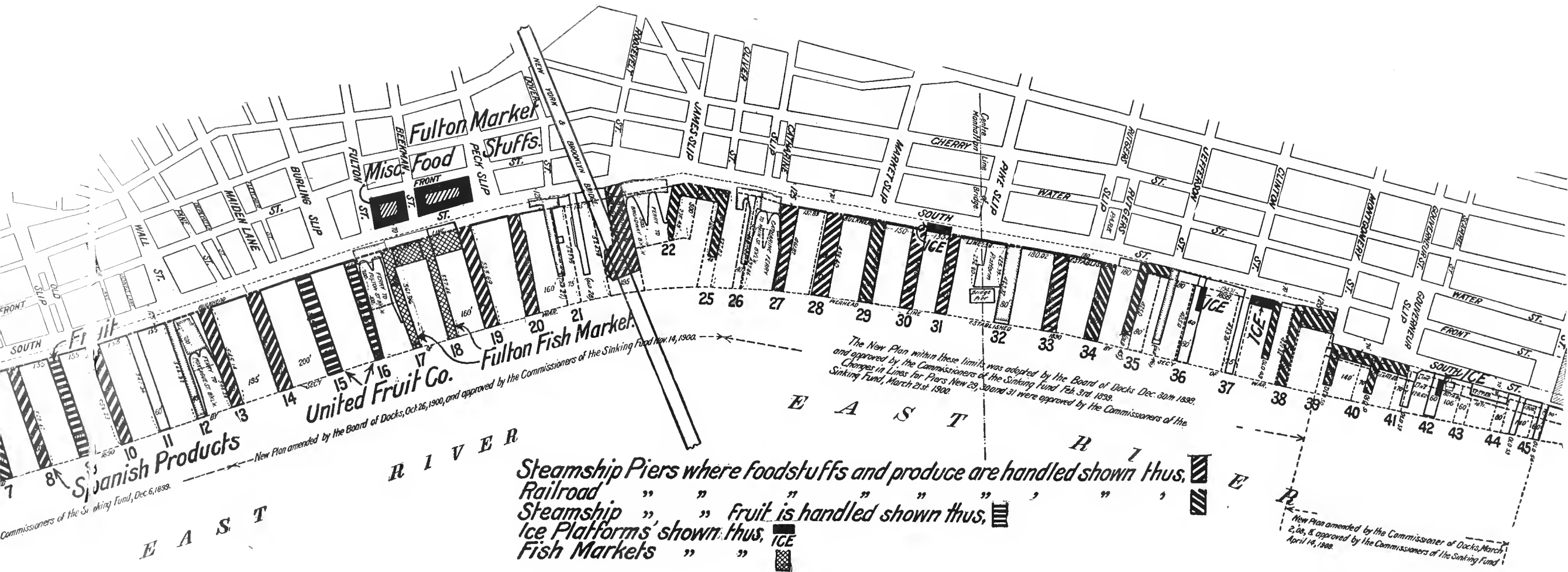
The greatest carrier of green vegetables and fruit by boat from the south is the Old Dominion Steamship Company, occupying the piers and bulkheads known as Nos. 25 and 26, located at the foot of North Moore Street and Beach Street, respectively. This company brings to the city daily large consignments of peas, beans, cauliflower, kale, spinach, onions, cabbage, and strawberries. During the busy season two steamers run daily between New York and Newport News, Va.

The Clyde Line, operating between New York, Charleston, and Jacksonville, also brings to this market a limited amount of green vegetables, as well as large quantities of watermelons and other fruits, discharging same at its piers, Nos. 36 and 37, N. R., at the foot of Spring and Vandam Streets, respectively.

The Mallory Line, located at Pier No. 38, N. R., foot of King Street, plying between Galveston and New York, brings to this market large quantities of Texas onions, some rice, and considerable other food stuffs.

The Quebec Steamship Company, located at Pier No. 47, N. R., foot of Perry Street, operates between New York and points in Bermuda, and brings into this market large quantities of celery, potatoes, kale, spinach, and other green vegetables, same disposition being made of the products as in the case of the railroads and other steamship companies.





Owing to the shortness of the crop of potatoes from Maine and other domestic centers, large quantities of potatoes are being imported from Scotland and Ireland. The Atlantic Transport Company, at Pier 58, foot of West Seventeenth Street, and the Anchor Line, at Pier 64, foot of West Twenty-fourth Street, have been bringing to this country since last November thousands of bags of potatoes, in many cases the entire cargo of these vessels consisting entirely of potatoes. The same process is observed in the handling of these potatoes as at the other water front markets, i. e., certain spaces are allotted to the commission merchants on the pier for the distribution and sale of the products.

The City of New York has also established certain markets for green vegetables in close proximity to the water front, where the Long Island farmers can drive to College Point and Astoria and reach the metropolis by ferry. One of these markets is located at 103d Street, east of First Avenue; another in The Bronx, at East 132d Street, Port Morris; a third at Gansevoort Street, North River, and a very large market in the Wallabout District, Brooklyn. Most of the produce is disposed of to the commission merchants and small dealers in green vegetables in the different localities above mentioned.

Since food stuffs of one kind or another are handled at about 90 per cent. of all the piers in Greater New York, I shall not attempt to give them all in detail, but confine myself to the most prominent handlers of this commodity.

The New York Central & Hudson River Railroad, through its hay shed at Thirty-third Street, North River, handles the largest amount of hay coming into the New York market, its receipts for 1911 being approximately 132,000 tons. In addition to this, including its leased lines, the West Shore Railroad, it brings into the city large quantities of milk, dairy products, fresh meat, poultry, apples, flour, grain, and other food stuffs. This railroad, being wholly within the State of New York, is not subject to the regulations of the Interstate Commerce Commission; but, since the West Shore Railroad is subject to these regulations, it conforms voluntarily with the tariff regulations of the other trunk lines. The principal receiving and delivery stations are located as follows: Piers 16 and 17, N. R., foot of Barclay Street and Park Place, respectively; Pier 23, West Shore Railroad, foot of Franklin Street; Pier 31, foot of Watts Street, N. R.; Piers 71 and 72, at the foot of West Thirty-first and Thirty-third Streets, respectively, and Pier 34, E. R., foot of Rutgers Street. At all these different stations large quantities of food stuffs are received.

The Erie Railroad, in addition to being the second largest handler of hay in this city (108,000 tons in 1911), carries 95 per cent. of all the citrus and deciduous fruits coming from California to the New York market, having special facilities for handling the business on its Pier No. 20, N. R., located at the foot of Chambers Street. It also brings to the New York market practically all of the higher grade of melons from California and Colorado, as well as all the choice apples in boxes from Oregon and Washington. All this fruit is shipped to New York in cars especially built for this service. Pier No. 20, N. R., is considered the market for California fruits, the railroad paying particular attention to the care of the fruit while in transit and when unloaded. The pier has a concrete floor and is fitted with a heating apparatus with a blower attachment, thus giving an even temperature throughout the pier, which is absolutely necessary in order to keep the fruit from freezing in cold weather. The interior of the pier is laid out in alphabetical sections, each section representing a certain grade of fruit, and each grade of fruit in the catalogue corresponds with the fruit in that particular section of the pier. All of this fruit is auctioned off each day by the auctioneer, in a commodious room provided by the railroad for this purpose, the shipments being promptly removed during the day by the purchasers. In addition to the California fruit, the Erie Railroad is a large carrier of milk, dairy products, and a considerable quantity of onions and canned goods, as well as considerable

meat and poultry. This railroad has large receiving stations at Piers Nos. 20 and 21, N. R., foot of Chambers Street; bulkhead shed, on the north side of Pier 67, N. R., foot of Twenty-seventh Street; a pier at Forty-ninth Street, N. R., which it holds under permit; New Pier No. 7, foot of Coenties Slip, E. R., and a large terminal at the bulkhead in Wallabout Basin, Brooklyn.

The Lehigh Valley Railroad is the largest carrier of flour into the City of New York. In addition to its receiving stations on Piers 2 and 3, foot of Morris Street, it has other receiving stations at Pier 34, foot of Canal Street, N. R.; Pier 44, foot of Christopher Street, and Pier 66, foot of West Twenty-sixth Street, N. R.; a bulkhead running through from Forty-third to Forty-fourth Streets, E. R., and one at East 124th Street, H. R.; a bulkhead at 146th to 149th Streets, H. R., and the south side of Pier 4, in the Wallabout, Brooklyn. The Lehigh Valley Railroad also controls five large storage warehouses at Communipaw, N. J., where great quantities of flour and other food stuffs are kept in storage until wanted. Besides being the largest carrier of flour into New York, this railroad handles considerable quantities of milk, dairy products, potatoes, onions, and cereals, as well as a large amount of canned goods, apples, and other fruits.

The Delaware, Lackawanna & Western Railroad brings to New York over its lines large quantities of milk and dairy products, fresh beef, dressed poultry, apples, potatoes, and all other classes of food stuffs, its principal station being located at Pier 13, N. R., foot of Fulton Street; Pier 41 and bulkhead, foot of Leroy Street, N. R.; Pier 68, foot of West Twenty-eighth Street, and Pier New No. 26, foot of Catherine Street, E. R., with a large terminal on the north side of the Wallabout Canal, Brooklyn.

The Central Vermont Railway receives by boat at its Pier 29, foot of Market Street, E. R., about 19,000 tons of hay annually, 39,000 tons of condensed milk, 3,000 tons of flour, and about 200 tons of maple sugar and syrup.

The Long Island Railroad, at its Piers Nos. 22 to 25, foot of James Slip, E. R., handles large quantities of green vegetables and food stuffs from Long Island.

The New York, New Haven & Hartford Railroad brings to the New York market large quantities of fish, both fresh and canned, some canned vegetables and a large quantity of potatoes, which are delivered at the potato house of the Harlem River terminal and disposed of by the consignee. Besides the Willis Avenue terminal, this railroad has a number of receiving stations along the East River, among them being Old Pier No. 45, at Jefferson Street, West; New Nos. 38 and 39, foot of Montgomery Street, and Piers 40 and 41, with bulkhead sheds, foot of Gouverneur Street.

The New York, Ontario & Western Railroad, occupying jointly with the West Shore Railroad Pier 23, at the foot of Harrison Street, North River, is the largest carrier of fluid milk and condensed milk to the New York market. This railroad runs through the most fertile part of New York and the very large farming section. The milk is brought to New York in refrigerator cars and unloaded at the several milk platforms of the different railroads in Jersey City. The New York Central & Hudson River Railroad is the only railroad having its milk platform in New York City, one being located at Melrose Junction and another at Thirtieth Street, N. R. The New York, Ontario & Western Railroad also brings to the city large quantities of dairy products and a considerable amount of canned fruits and vegetables and large quantities of apples in season.

Fifty-five per cent. of all the cattle coming to this city is brought in by the different railroads on the hoof and transferred from the stock yards to the several abattoirs in the city as required. The principal abattoirs in New York City are located between Thirty-eighth and Fortieth Streets on the North River, and from Forty-third to Forty-fifth Streets on the East River. The New York Butchers' Dressed Meat Company uses 300 feet of the north side of Pier 79, foot of Thirty-ninth Street,

N. R., as a runway for the unloading of beeves, sheep, and pigs, and the New York Stock Yards Company has a similar location on the northerly side of Pier 80, foot of Fortieth Street, N. R., for the same purpose. An unloading station at the foot of East Forty-third and Forty-fourth Streets, E. R., is established for the unloading of cattle, sheep, and hogs entering the immense slaughtering establishments of the United Dressed Beef Company and Sulzberger Sons Company, at Forty-third and Forty-fourth Streets and First Avenue.

Two other important articles of food are received on the water front, for which provision is made by the Commissioner of Docks, namely, oysters and fresh fish.

The basins on the North River between piers known as Gansevoort South, Gansevoort Middle, and Gansevoort North have been set aside for the convenience of the merchants engaged in the oyster business. In these basins a number of oyster houses on floats are located, where during the oyster season as much as 70 tons of oysters are received daily. The oysters are brought to these oyster houses or depots in sloops and the oysters are transferred to the oyster houses and opened and placed in sealed cans and distributed to the retail dealers. A considerable quantity of this food stuff, however, is placed in sealed cans, iced and boxed, and shipped to cities inland, some of these oysters going as far west as Chicago.

The other food commodity received in large quantities on the New York water front is fresh fish. The Department of Docks and Ferries has set aside Piers 17 and 18 on the East River, at the foot of Fulton Street, for the convenience of the wholesale fish merchants. Commodious markets are established on the bulkheads adjoining, the one at Pier 17 covering the pier and half the bulkhead east, being leased to the Fulton Market Fishmongers' Association, while the Independent Wholesale Fish Dealers' Association occupies the balance of this space and Pier 18 for the handling and disposition of its products. Upward of 3,000 tons of fresh fish is handled each month at these two markets.

Ice is another necessity that must be considered in connection with food supplies. The Commissioner of Docks locates ice bridges and platforms along the water front of the city as necessity requires. Some of the principal ice dealers are the Knickerbocker Ice Company, Foster-Scott Ice Company, National Ice Company, the Merchants' Union Ice Company, and Flasco Ice Company.

STEAMSHIP LINES

SOUTHERN PACIFIC STEAMSHIP COMPANY

Piers 48 to 51, N. R., Perry to Bethune Streets

This company operates between New York, Galveston, and New Orleans, and brings to New York large quantities of molasses, rice, flour, onions, dried and canned fruits, peas, and beans. The sugar goes direct to the refineries or is lightered there from the vessel's side, none going into the warehouses.

PANAMA STEAMSHIP COMPANY

Pier 52, Foot of Gansevoort Street

Operated by the Ishmian Canal Commission in connection with the Panama Railroad, and plying between New York and Colon. This line is a large carrier of dried fruits and food stuffs from California and other points on the Pacific Coast and from Central American ports, bringing from California large quantities of barley, beans, canned vegetables, and fruits, herbs, raisins, canned salmon, almonds and walnuts from South America, cocoanuts, coffee, cocoa, and sugar. The sugar, if in bulk,

is consigned direct to the refineries at Yonkers and at Brooklyn. The freight rate includes the unloading and placing of the commodity on the refinery floor. This line also carries all the Government employees to the Panama Canal.

CUNARD LINE

Piers 53, 54, and 56, N. R., West Twelfth to Fourteenth Streets

Operating between New York, Fishguard, and Queenstown. This line brings to the New York market large quantities of ales, porters, canned goods of all kinds, malt and malt extracts, tapioca flour, olive oil, figs, dates, and all kinds of beans. In addition, this line is a direct competitor of the several Italian lines for the Mediterranean business, bringing to this port large quantities of macaroni, olive oil, grapes, nuts and raisins, tomato paste, prunes, cheese, and a large quantity of Italian wines.

COMPAGNIE GÉNÉRALE TRANSATLANTIQUE

Pier No. 57, Foot of West Fifteenth Street

From Bordeaux and Havre it brings to this port all kinds of French wines and brandies, preserves, caviar, cheese, sardines, and large quantities of canned goods.

ATLANTIC TRANSPORT LINE

Pier 58, N. R., Foot West Seventeenth Street

Between New York and London. In addition to large quantities of potatoes, this line brings to New York beans of all kinds, dates, figs, fish, lime juice, almonds, gelatine, and all kinds of nuts and canned goods.

RED STAR LINE

Pier 59, N. R., Foot West Eighteenth Street

Between New York and Antwerp. Brings to this market large quantities of potatoes, grapes, Rhine wines, champagnes, preserves, sardines, cheese, frankfurter sausages, and fish in barrels.

WHITE STAR LINE

Piers 60 and 61, Foot West Twentieth and Twenty-first Streets

Between New York, Liverpool, and Southampton. Brings to this city large quantities of canned goods, wines, brandies, preserves, mineral waters, potatoes, cheese, sardines, and tapioca flour, as well as considerable ales, beer, and nuts of various kinds.

AMERICAN LINE

Pier No. 62, Foot West Twenty-second Street

Between New York and Southampton. Brings to this market large quantities of wines, ales, porter, sardines, peanuts, rice, grapes, figs, canned goods, and large quantities of lemons.

ANCHOR LINE

Pier No. 64, Foot West Twenty-fourth Street

Between New York and Glasgow. Brings to this port large quantities of jams, lentils, salt herring and dried fish, and considerable Scotch whisky. This steamship line has been bringing into the New York market since November last large quantities

of Scotch potatoes, and after paying duty the consignees are able to sell the potatoes on the dock at Twenty-fourth Street at from \$2.25 to \$2.50 per barrel. Domestic potatoes are selling in this market from \$4 to \$5 per barrel.

HAMBURG-AMERICAN LINE

Pier No. 65, Foot West Twenty-fifth Street

Between New York and Mediterranean ports, and brings to this port large quantities of macaroni, olive oil, garlic, wines, olives, tomato paste, and nuts of various kinds.

LA VELOCE NAVIGAZIONE ITALIA A VAPORE

Pier No. 74, N. R., Foot of West Thirty-fourth Street

From Genoa and Naples, and brings to this port large quantities of macaroni, olive oil, garlic, Italian wines, olives, tomato paste, nuts of various kinds, onions, rice, beans, cheese, sardines and other canned fish, dried peppers, candy, and dried fruits. Small profit in freight; dividends come from the passenger business.

COMPANIA TRANSATLANTICA (SPANISH LINE)

Pier 8, E. R., Coenties Slip, East

Operating between New York and Barcelona, Malaga, and Cadiz, Spain. Brings to this market large quantities of Spanish wines, onions, garlic, olive oil, olives, canned anchovies and other kinds of canned fish, and all kinds of nuts and raisins. This is the only line to Spain direct from New York.

MUNSON LINE

Pier 9, E. R., Foot of Old Slip

Plying between New York and Cuba; brings into this port large quantities of honey, molasses, raw sugar, and some grape fruit. The raw sugar either goes direct to the refinery by steamer or is lightered there. This company sub-leases the east side of its pier to the Atlantic Fruit Company.

ATLANTIC FRUIT COMPANY

East Side of Pier 9, E. R.

Brings to this port from Cuban and West Indian ports large quantities of bananas. These bananas are graded at the receiving point and sold by auction over the ship's side on arrival in New York.

NEW YORK & CUBA MAIL STEAMSHIP COMPANY

Piers 13 and 14, E. R., Between Wall Street and Maiden Lane

Operating between New York and Havana, Cuba. Brings to this port large quantities of raw sugar, some coffee, and considerable grape fruit and tomatoes.

UNITED FRUIT COMPANY

Piers 15 and 16, E. R., Burling Slip

Operates between New York and Cuba and other West Indian ports, including Jamaica and Porto Rico. Carries principally bananas to this port, some grape fruit,

oranges, and cocoanuts. The United Fruit Company regulates the price on each cargo of bananas brought into this port by its ships daily. Mode of delivery by truck, except such as are put over the ship's side into refrigerator cars for Western delivery.

CUNEO STEAMSHIP COMPANY

Pier No. 1, N. R., Foot Battery Place

Plying between New York and South American ports, brings to this city large quantities of bananas; these bananas are graded at receiving point and sold by the auctioneer over the ship's side in New York, being taken away in the usual manner, that is, by truck for city delivery or over the vessels into refrigerator cars for Western delivery.

HARTFORD & NEW YORK TRANSPORTATION COMPANY

Piers 19 and 20, E. R., Foot of Peck Slip

Between New York and points in New England, brings to this market large quantities of fresh and canned fish, canned corn and beans, and very large quantity of Maine potatoes.

In addition to the food stuffs received at the different piers on Manhattan Island, great quantities of this commodity are received in Brooklyn at the large and commodious piers, warehouses, and railroad terminals of the New York Dock Company. These piers, warehouses, and railroad terminals extend along the Brooklyn water front for a distance of three miles. On this extended water front 39 piers of various size are located, the longest being 1,193 feet from end to end, more than 200 warehouses with a cubic capacity of 81,625,652 cubic feet, three railroad freight terminals (located at Fulton Street, Baltic Street, and Atlantic Avenue), and an assembly depot for lighter shipments in the Atlantic Basin.

Great quantities of coffee are stored on these piers and in the warehouses of the company, this being called the coffee market for Brazilian coffee coming into the United States.

A large number of these piers are leased to steamship lines, as follows:

BOOTH STEAMSHIP LINE

Foot of Poplar Street, Pier 4

Plying between New York and Brazil, brings to this country large quantities of Brazil nuts (about 5,000 tons per annum). Its principal cargo is rubber, which is brought from points on the Amazon River.

LAMPORT & HOLT LINE

Pier 8, Foot of Orange Street

Between New York and ports in Brazil and the Argentine Republic. This line carries large quantities of coffee in bags and considerable cocoa.

RED "D" LINE

From ports in Venezuela and Porto Rico; cargo principally coffee and cocoa.

NEW YORK & CUBA MAIL STEAMSHIP COMPANY

Piers 16 and 19, Between Remsen and State Streets

Between New York and Cuban and Mexican ports; carries to this market large quantities of sugar, coffee, and fruits.

PIERCE LINE

Pier 22, Foot of Pacific Street

From Mediterranean ports; carries large quantities of fruit, macaroni, and olive oil, and all other classes of food stuffs from the East.

ANCHOR LINE

Pier No. 29, Foot of Harrison Street

From Genoa and Naples, and brings to this city large quantities of macaroni, olive oil, olives, nuts of all kinds, and considerable Italian wines.

TRINIDAD SHIPPING & TRADING COMPANY

Pier 24, Foot of Amity Street

Between New York and West Indian ports, bringing to this market large quantities of coffee, sugar, and cocoa.

INSULAR LINE

Pier 27, Foot of Baltic Street

Plying between New York and Porto Rico, carries large quantities of sugar, coffee, and some fruit.

CLYDE WEST INDIAN LINE

Pier 34, Foot of Union Street

Between New York and West Indies; carries large quantities of coffee, sugar, cocoa, and fruit.

NEW YORK & PORTO RICO STEAMSHIP COMPANY

Pier 35, Foot of Union Street

Between New York and Porto Rico; carries large quantities of coffee, sugar, and fruit.

The following steamship lines dock at the open piers of the New York Dock Company, but have no particular designated pier space:

URANIUM STEAMSHIP COMPANY

From Hamburg; carries a general cargo, mostly case goods.

NEW YORK & DEMERARA STEAMSHIP LINE

From West Indian ports; carries principally sugar.

PRINCE LINE

From Brazil; carries principally coffee and sugar.

FUNCH, EDYE & Co.

From Brazil; cargo principally coffee and cocoa.

HELLENIC LINE

From Greece; carries great quantities of Eastern fruit, both green and preserved.

FABRE LINE

Foot of Thirty-first Street, South Brooklyn

Plying between New York and Genoa and Naples and other Mediterranean ports; brings to this city large quantities of macaroni, olive oil, olives, dried peas and beans, cheese, preserves, and tomato paste.

The Bush Terminal Company's plant, embracing piers, warehouses, and railroad terminals, extending from 40th to 52d Streets, South Brooklyn, is the most complete and up-to-date dock and terminal system in New York Harbor. Seven large concrete piers extend out in the bay for a distance of over 1,300 feet. These piers are covered with new steel sheds of the latest approved type and of modern construction. These piers furnish ample docking facilities for a large number of steamship lines, as many as 27 steamships being docked there at one time. Back of these piers on the upland a number of large and commodious warehouses of concrete construction are located. Four of these warehouses are 600 feet long, 75 feet wide, and six stories high; 14 being 700 feet long, 75 feet wide, and six stories high, and a number of smaller buildings of modern construction. These buildings are equipped with elevators capable of carrying a carload of freight at one time, and back of these piers and warehouses a system of railroad tracks is laid out which provides ample facilities for transferring loaded cars to and from the warehouses above referred to. At the extreme south of this property a large car float terminal is located with ample transfer bridges to take care of the car floats coming to the terminal. I give you below some of the steamship lines occupying the piers of the Terminal Company:

AUSTRO-AMERICAN STEAMSHIP COMPANY, LTD.

Pier 1, Foot of Fiftieth Street

Plying between New York and Mediterranean ports; brings to this city large quantities of olive oil, olives, lemons, oranges, almonds, cheese, and canned goods.

NORTON & SON

Pier 2

Between New York and South American ports; brings in large quantities of cocoa, cocoanuts, and other South American products.

FUNCH, EDEY & Co.

Pier 3, Foot of Forty-seventh Street

Between New York and West Indian ports; brings into this market large quantities of cocoa beans, domestic cocoanuts, coffee, and other West Indian products.

PRINCE LINE

Pier 4, Foot of Forty-fifth Street

Between New York, Bombay, and Calcutta; brings to this market large quantities of peas, raisins, cinnamon, cheese, cocoa beans, and large quantities of preserved fruits.

LLOYD BRAZILLIENO

Pier 5, Foot of Forty-fourth Street

Between New York and ports in Brazil; brings to this city large quantities of coffee, cocoa, and other South American products.

Pier 6, Foot of Forty-second Street

Open pier for tramp steamers.

AMERICAN HAWAIIAN LINE

Pier No. 7, Foot of Forty-first Street

From Mexico and other ports; brings to this city all kinds of dried fruits, salmon, preserved vegetables, currants, and some California wines.

II—FINANCIAL STATEMENT
OF
PUBLIC MARKETS
OF
THE CITY OF NEW YORK
1910, 1911 AND 1912

Prepared by SIDNEY A. GOODACRE
of the Department of Finance,
City of New York

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WALLABOUT MARKET, 1912.

ASSESSED VALUATION

Land.....	\$1,150,900.00	
Buildings.....	4,500.00	
Total.....		\$1,155,400.00

ORIGINAL COST

Land.....	\$1,413,760.00	
Buildings.....	4,500.00	
Total.....		\$1,418,260.00

INCOME

Lot rents.....	\$67,803.56	
Wagon fees.....	11,221.00	
Total.....		\$79,024.56

EXPENSES

Labor.....	\$14,345.01	
Supplies.....	955.69	
Repairs.....	277.70	
Lighting.....	3,300.00	
Collector's salary.....	1,650.00	
Total.....	\$20,528.40	
Interest 4% on assessed valuation.....	46,216.00	66,744.40
Balance.....		\$12,280.16

LOSSES BY EXEMPTION FROM TAXATION.....

Balance.....	\$21,605.98	
	12,280.16	
Net loss.....		9,325.82

TAXES PAID BY OWNERS OF BUILDINGS

Valuation, \$916,400.00.....	\$17,136.68
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WEST WASHINGTON MARKET.

	1910.		1911.		1912.	
ASSESSED VALUATION						
Land.....	\$950,000.00		\$950,000.00		\$950,000.00	
Buildings.....	150,000.00		150,000.00		150,000.00	
Total.....	\$1,100,000.00		\$1,100,000.00		\$1,100,000.00	
ORIGINAL COST						
Land.....	\$365,987.50		\$365,987.50		\$365,987.50	
Buildings.....	503,715.15		503,715.15		503,715.15	
Repairing fire damage.....	40,000.00		40,000.00		40,000.00	
Total.....	909,702.65		909,702.65		909,702.65	
Increase.....		\$190,297.35		\$190,297.35		\$190,297.35
INCOME						
Stand rents.....	\$108,745.00		\$108,745.00		\$108,361.25	
Permits.....	14.00		15.00		11.00	
Total.....	108,759.00		108,760.00		108,372.25	
COSTS						
Cleaning, salaries.....	\$2,014.12		\$2,832.75		\$2,813.25	
Horses and carts.....	4,519.42		3,374.43		2,735.24	
Supplies.....	23.28		30.44		20.82	
Lighting market.....	1,224.47		1,200.00		1,200.00	
Collector's salary.....	750.00		750.00		750.00	
Repairs.....	1,512.92		1,618.90		4,217.52	
Total.....	\$10,044.21		\$9,806.52		\$11,736.83	
Interest, 4% on valuation.....	44,000.00	54,044.21	44,000.00	53,806.52	44,000.00	55,736.83
Surplus income.....		54,714.79		54,953.48		52,635.42
Loss by exemption from taxation.....		19,336.90		18,947.28		20,130.00
Net profit to taxpayers.....		\$35,377.89		\$36,006.20		\$32,505.42

WASHINGTON MARKET.

	1910.	1911.	1912.
ASSESSED VALUATION			
Land.....	\$880,000.00		
Buildings.....	20,000.00	\$950,000.00	\$950,000.00
Total.....	\$900,000.00	\$1,000,000.00	\$1,025,000.00
ORIGINAL COST			
Land.....			
Buildings.....	\$277,380.85	\$277,380.85	\$277,380.85
Total.....	277,380.85	277,380.85	277,380.85
INCOME			
Stand rent.....	\$53,914.90		
Wagon fees.....	145.00	\$51,426.68	
Permits.....	58.00	20.00	
Total.....	54,117.90	51,555.45	51,446.68
Costs			
Cleaning, salaries.....	\$3,792.50		\$2,147.00
Horses and carts.....	5,090.31	\$3,196.50	1,088.50
Supplies.....	420.10	4,354.00	
Lighting Market.....	979.95	1,139.25	
Collector's salary.....	1,500.00	1,500.00	1,500.00
Repairs.....	6,664.17	42,065.43	5,154.69
Total.....	\$18,447.03	\$52,255.18	\$11,220.18
Interest, 4% on valuation.....	36,000.00	40,000.00	41,000.00
Deficit.....		92,255.18	52,220.18
Loss by exemption from taxation.....		\$40,699.73	\$773.50
Total cost to taxpayers.....		17,224.80	17,655.42
		* \$57,924.53	\$18,428.92

* Includes \$37,362.92 improvements; net, \$20,561.61.

FULTON MARKET.

	1910.	1911.	1912.
ASSESSED VALUATION			
Land.....	\$450,000.00	\$450,000.00	\$450,000.00
Buildings.....	75,000.00	75,000.00	75,000.00
Total.....	\$525,000.00	\$525,000.00	\$525,000.00
ORIGINAL COST			
Land.....	\$216,284.60	\$216,284.60	\$216,284.60
Buildings.....	177,341.24	177,341.24	177,341.24
Total.....	393,625.84	393,625.84	393,625.84
Increase.....	\$131,374.16	\$131,374.16	\$131,374.16
INCOME			
Stand rent.....	\$37,592.80	\$37,785.36	\$34,722.12
Wagon fees.....	72.50	37.25	41.25
Permits.....	9.00	15.00	11.00
Total.....	\$37,674.30	\$37,837.61	\$34,774.37
COSTS			
Cleaning salaries.....	\$3,341.12	\$3,525.25	\$1,887.94
Horses and carts.....	4,202.68	3,286.50	826.00
Supplies.....	40.00	.....	.....
Lighting Market.....	504.23	581.10	437.85
Collector's salary, etc.....	675.00	675.00	675.00
Repairs, wages and materials.....	940.37	758.82	273.30
Total.....	\$9,703.40	\$8,826.67	\$4,100.09
Interest, 4% on valuation.....	21,000.00	21,000.00	21,000.00
Surplus income.....	6,970.90	8,010.94	9,674.28
Loss by exemption from taxes.....	9,238.98	9,042.03	9,607.50
Net cost to taxpayers.....	\$2,258.08	\$1,031.09	.....
Net profit to taxpayers.....	.....	.....	\$63.78

JEFFERSON MARKET.

	1910.	1911.	1912.
ASSESSED VALUATION			
Land.....	\$150,000.00	\$150,000.00	\$150,000.00
Building.....	40,000.00	40,000.00	40,000.00
Total.....	\$190,000.00	\$190,000.00	\$190,000.00
ORIGINAL COST			
Land.....	\$55,170.00	\$55,170.00	\$55,170.00
Building.....	71,972.61	71,972.61	71,972.61
Total.....	127,142.61	127,142.61	127,142.61
Increase.....	\$62,857.39	\$62,857.39	\$62,857.39
INCOME			
Stand rent.....	\$9,360.00	\$9,125.00	\$9,217.00
Upper floors.....	845.00	625.00	750.00
Permits.....	4.00	1.00	2.00
Total.....	10,209.00	9,751.00	9,969.00
COSTS			
Cleaning, salaries.....	\$1,656.50	\$1,880.25	\$1,095.00
Horses and carts.....	1,455.99	2,093.87	447.56
Supplies.....	8.01	.....	.....
Lighting Market.....	208.43	200.00	200.00
Collector's salary.....	675.00	675.00	675.00
Repairs.....	25.21	1,656.46	798.53
Total.....	\$4,029.14	\$6,505.58	\$3,216.09
Interest, 4% on valuation.....	7,600.00	7,600.00	7,600.00
Deficit.....	1,420.14	4,354.58	847.09
Loss by exemption from taxation..	3,340.00	3,272.71	3,447.00
Net cost to taxpayers.....	\$4,760.14	\$7,627.29	\$4,324.09

GANSEVOORT MARKET, 1912.

ASSESSED VALUATION

Land.....	\$850,000.00	
Buildings.....	None	
Total.....		\$850,000.00

ORIGINAL COST

Land.....	
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INCOME

Wagon fees.....	\$8,654.25
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EXPENSES

Cleaners and laborers.....	\$3,082.12	
Horses and carts.....	2,557.18	
Supplies (janitorial).....	1.54	
Repairs and material.....	80.27	
Collector's salary.....	750.00	
Total.....	\$6,472.11	
Interest at 4% on assessed valuation.....	34,000.00	40,472.11
Loss.....		31,817.86
LOSS BY EXEMPTION FROM TAXES.....	\$15,895.00	
		47,712.86
Net loss.....		\$47,712.86

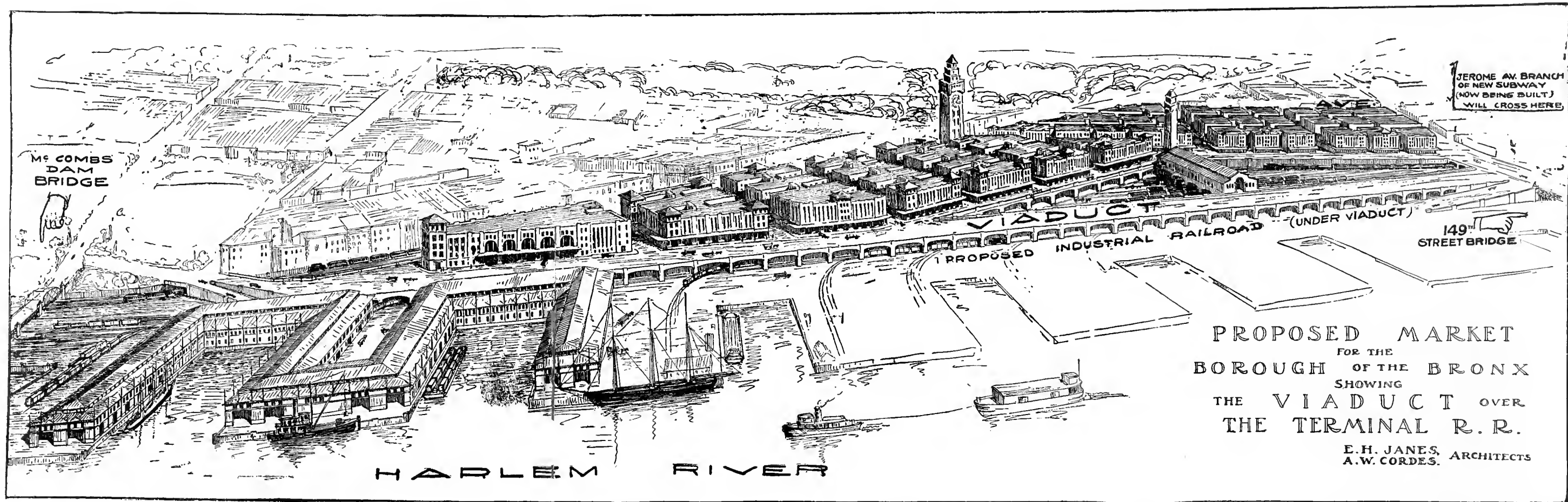
DELANCEY STREET MARKET, 1912.

INCOME

Land acquired for bridge structure.....	None	
Buildings.....	None	
Wagon fees.....	\$6,387.00	
Stand fees.....	5,267.00	
Total.....		\$11,654.00

EXPENDITURES

Two sweepers (part time), D. S. C.....	\$720.00	
Horses and carts (part time), (estimated).....	720.00	
Collector's salary, Department of Finance.....	1,650.00	
Financial, stationery and supplies (estimated).....	300.00	3,390.00
Net profit.....		\$8,264.00



MC COMBS
DAM
BRIDGE

JEROME AV. BRANCH
OF NEW SUBWAY
(NOW BEING BUILT)
WILL CROSS HERE

149TH
STREET BRIDGE

PROPOSED MARKET
FOR THE
BOROUGH OF THE BRONX
SHOWING
THE VIADUCT OVER
THE TERMINAL R.R.

E. H. JAMES, A. W. CORDES, ARCHITECTS

III. PROPOSED BRONX MARKET

A WHOLESALE, NOT RETAIL, MARKET

The proposed market is primarily a wholesale market, designed to receive food stuffs from everywhere—by rail, by boat, and by farmer's wagon—and to distribute them among the retailers who are performing to-day the function of supplying the ultimate consumer. Its function is not to provide a place where the farmer or producer can sell at retail directly to the consumer. New York, like most other metropolitan cities, has grown so large, both in area and in population, that it has become physically impossible for the neighboring producers to bring enough supplies to the market, and for the consumer to go to market for his small daily needs. It will handle foodstuffs with the least waste of effort and with the smallest deterioration in quality, and it will keep them in storage at the market under the most perfect conditions until the consumer wants them. The municipal authorities may exercise here a control over the methods of buying and selling sufficient to counteract violent fluctuations in price and unjust price fixing.

The effect of collecting the food supply for a section of the city in one place will be to enable the city authorities to inspect the goods thoroughly, and to prevent injurious food stuffs from being introduced into the market or sold there. The Department of Markets can enact rules forbidding the sale of impure foods in the markets, in the same way that the United States Government forbids improper use of the mails. The effect of this protection of the food supply of the city would be very beneficial.

LOCATION

The proposed market occupies two parcels of land. One, with an area of about 18.5 acres, has, roughly, the shape of a very flat triangle.

Its broad base extends along Exterior Street, which is the marginal street along the Harlem River, from the 149th Street bridge to the 151st Street bridge; its northerly side is formed by 151st Street, which is parallel with the tracks of the New York Central Railroad, running from Mott Haven to the Harlem River; and its easterly side is formed by River Avenue, from 151st Street to the 149th Street bridge approach. This parcel is covered by the market railroad yard, by the power house, and by a group of buildings.

The other parcel covers 9.75 acres, and is bounded by River Avenue, 151st Street, Walton Avenue, and 149th Street, and is covered by another group of buildings.

Two slips on the Harlem River, at the foot of 151st Street will accommodate vessels bringing foodstuffs to market. The goods can be quickly unloaded to the sheds on the adjacent piers for immediate sale or for storage, or they may be removed to the market building for cold or other storage by trolley cars, which run from the pier sheds into the market buildings.

INDUSTRIAL RAILROAD

The proposed industrial railroad along the Harlem waterfront will pass by the market. As this railroad will serve to connect the Pennsylvania-Long Island-New Haven system with the New York Central system, as well as with the Bronx terminals

of the Jersey Central, Lehigh Valley and other lines, all the railroads which now supply New York with foodstuffs will be brought not only to the very doors of the market, but into the basements of the market buildings themselves.

CENTRAL STATION

The situation of the market is central. Although located in The Bronx, it is not exclusively a Bronx market. The Harlem River bridges on the south, and the 161st Street and Washington bridges on the north, lead into broad avenues with light grades, which bring the market within easy reach of the whole of Manhattan Borough above 110th Street, a section of the City which is at present singularly unprovided with market facilities of any importance.

Besides serving The Bronx and upper Manhattan, the market will also serve as a base of supplies for Mt. Vernon, New Rochelle, and a part of Yonkers.

It has been laid out on lines broad enough to supply the needs of a population which, according to the estimates of competent authorities, will be in excess of 3,000,000 in 1940.

GROUND OR TRACK LEVEL

The ground or track level of the market is designed to act as a veritable through freight yard on the industrial railway. Experience in foreign cities, as well as a study of the peculiar needs of the market and of the character of the industrial railway, have shown that this is the only method of track arrangement which will satisfy the requirements. This level has therefore been divided into:

(1) A general freight yard of 6.55 acres, to be used for storing and switching cars, and for unloading directly from cars to trucks or drays, or vice versa;

(2) A section under one of the groups of buildings where the cars are brought alongside of broad unloading platforms of ample capacity. Broad driveways between these platforms will enable wagons to remove so much of the goods as is not intended to be stored in the building above. Elevators and stairways are provided for transferring goods from these platforms to the floors above for sale or for cold or other storage.

(3) A section under the other group of buildings where the tracks run along platforms which cannot be reached directly by wagons, but from which numerous elevators can remove the goods rapidly to the upper floors.

The floors on the street level of the buildings in this group are devoted to stalls where goods may be exposed for sale, and where buyer and seller can come together, sample the goods, and buy in smaller quantities than would probably be handled in the other buildings, which are devoted to the handling of goods sent on consignment.

THE RAILROAD YARD

The railroad yard is spanned by the power plant, which will supply all the buildings with refrigeration, and with heat and light. That part of Exterior Street which runs from the approach to the 149th Street bridge to the Jerome Avenue bridge will be carried on a viaduct.

The lower or track and pier level will be reached from the streets above by four ramps, or inclined approaches on easy grades, which are so located as to separate, where possible, the opposing currents of traffic.

Experience in other cities has shown that these currents are always heavy, and that they result in intolerable congestion unless properly regulated. Only trucks engaged in market traffic will have to cross the railroad tracks at grade, and this at well guarded crossings, not over the main tracks.

* The general street traffic from the bridges and from the adjacent streets, as well

Property of

PROPOSED MUNICIPAL MARKET

BOROUGH OF BROOKLYN
NEW YORK CITY

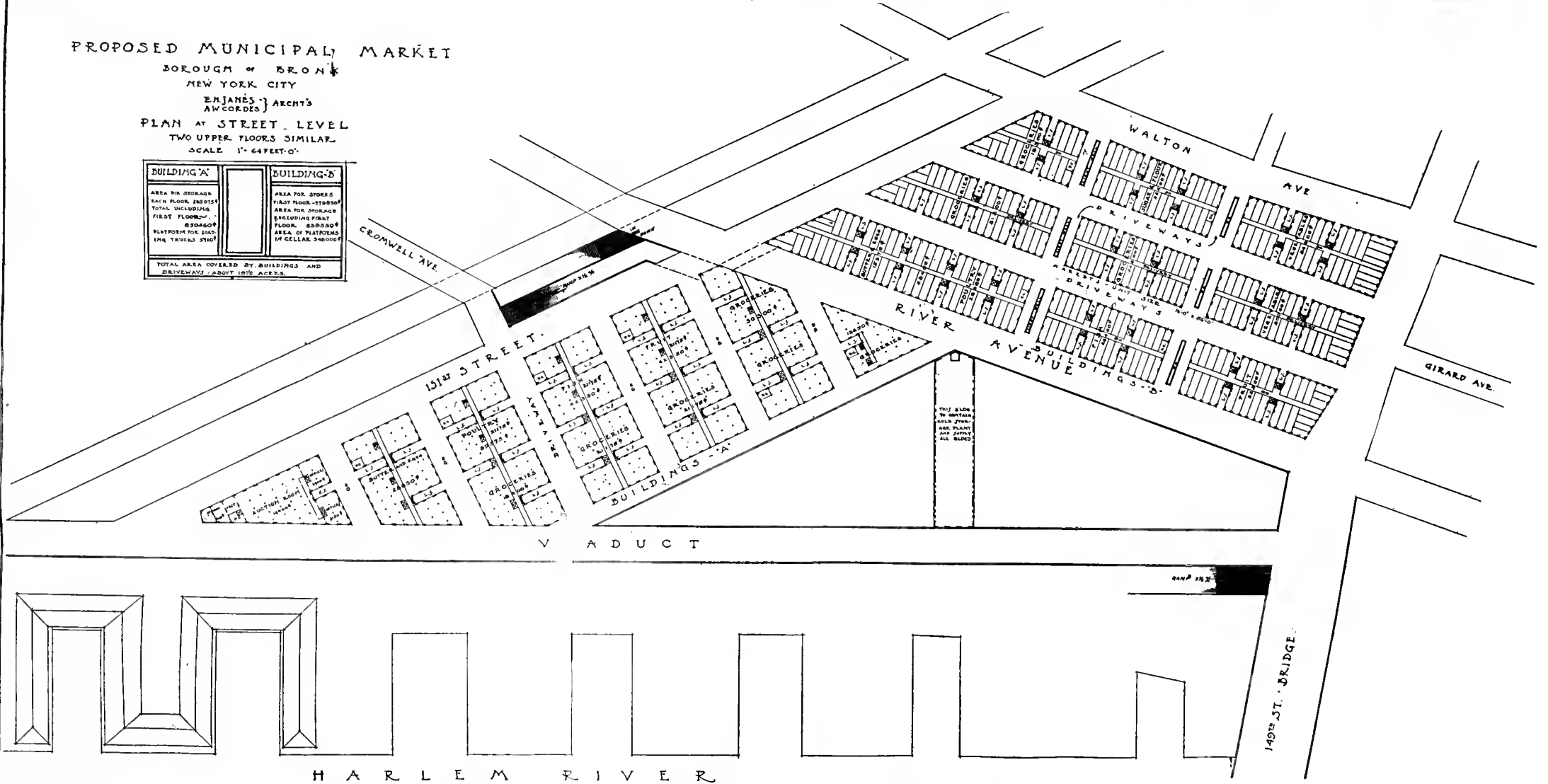
EMILIANE ARCHT'S
AWCORDES

PLAN AT STREET LEVEL

TWO UPPER FLOORS SIMILAR

SCALE 1" = 64 FEET 0"

BUILDING A	BUILDING B
AREA FOR STORAGE EACH FLOOR 1800 SQ. FT. TOTAL INCLUDING FIRST FLOOR 18000 STORAGE PLATFORM FOR 1000 TRUCKS 1800	AREA FOR STORES FIRST FLOOR 18000 AREA FOR STORAGE EXCLUDING FIRST FLOOR 18000 AREA OF PLATFORMS IN CELLAR 18000
TOTAL AREA COVERED BY BUILDINGS AND DRIVEWAYS ABOUT 100 ACRES.	



as the general market traffic, will be exposed neither to the delays nor to the dangers incident to railroad crossings at grade.

On this level will also be unloaded, and to a large extent probably sold, all the market goods brought in by boat. Products arriving by farm-wagon can also find accommodation on this level.

UPPER OR STREET LEVEL

The upper or street level shows the power plant, which spans the railroad yard from River Avenue to the Exterior Street viaduct; the group of buildings west of River Avenue, bounded by River Avenue, 151st Street, Exterior Street, and the railroad yard to the south; and the other group of buildings, east of River Avenue, bounded by River Avenue, 151st Street, Walton Avenue, and 149th Street.

In the buildings of the first group are handled foodstuffs sent on consignment, whether such stuffs require storing or not. The unloading platforms on the track level, which have an area of 149,000 square feet, and the broad driveways between them, which permit the simultaneous loading of 625 trucks, facilitate the removal of goods in large quantities with the least amount of handling.

On the street level the buildings are separated by driveways, where trucks can be loaded without obstructing the general street traffic.

At the northerly end of this group is the administration building. It contains, besides the administration and other offices, an auction room, covering 144,000 square feet.

No provision has been made in this group of buildings for stalls, stands, etc., for small trade. Should these be found necessary they can be easily provided.

Experience in other large cities has demonstrated the wisdom of permitting the minuter details to be shaped by the market conditions, which are constantly varying in response to the changes in business methods, transportation and marketing methods, etc.

OTHER GROUP OF BUILDINGS

The other group of buildings is devoted to stuffs which are to be sold to open market buyers or to consumers, who will inspect and sample the goods, and will generally buy in smaller quantities. It consists of nine buildings, four stories high above the street level.

As in the other group, driveways provide easy access for wagons to all the buildings without obstructing the general traffic. The street floor level of each of these buildings is divided into stores or stalls and stands where goods may be exposed for sale and for sampling.

The upper floors are devoted to cold and other storage goods, and may possibly be used later for further extending the number of stalls. Numerous elevators connect the platforms on the railroad level with the floors above, but no goods can be unloaded to trucks directly on the track level of this building.

The platforms and elevators are so laid out in both groups of buildings, that goods from any car can be easily brought to any building above with the least amount of handling. Numerous light shafts provide proper ventilation and lighting on all floors.

410 CARS CAN BE UNLOADED AT ONCE

The number of cars that can be unloaded at the same time in the proposed market is 410.

As the commodities will have to be unloaded practically at the same time, if the present method of sending goods to market can be used as a criterion, it will be seen that the trackage facilities are none too great. Further accommodations may, however, be provided on the piers and by improved methods of shipping and handling.

The platform areas available adjacent to the railroad tracks are: In the first group of buildings, 149,000 square feet; in the second group, 352,000 square feet. After allowance has been made for the space that must be left unobstructed, the platform area remaining is about twice as great as that of the maximum daily number of cars which are expected to arrive in 1940.

While ample, this is not excessive, for goods are never stacked so compactly on the platforms as in the cars, and interruptions to traffic or congestion on the tracks must be guarded against by insuring the removal of goods as soon as they arrive, without regard to the subsequent disposition made of these goods. These platforms act as regulating reservoirs—they take care of the daily fluctuations in the arrival and departure of goods, which must be made independent of one another in order to insure the most efficient utilization of the limited trackage facilities.

THE SELLING SPACE

The selling space provided on the street level in the second group of buildings is 279,850 square feet, or about 1,500 square feet per carload per maximum day in 1913, and 620 square feet per carload per maximum day in 1940.

These areas, when tested by the experience with selling space in markets of foreign cities, are none too great. They would, in fact, be too small were there not a possibility of extending the market over the railroad yard, piers, etc., and to the upper floors of the buildings.

The gross storage space in both groups of buildings is 1,690,000 square feet. Estimates of the quantities of commodities that have to be carried over from season to season, and of the height to which they can be stacked in the storeroom, show that by 1940 the capacity of the market will be more than fully utilized.

CONCENTRATING POWER

Experience in other cities has shown that the concentrating power of a central wholesale market is so intense that all who can avail themselves of the storage space will do so at the earliest possible moment. Hence all the space provided in the market is sure of occupancy soon after the erection of the market.

Further expansion may be provided for by making the foundation of the structures capable of bearing additional stories when required. The spaces over the piers and over the railroad yard, which are now left uncovered, provide room for further expansion.

The necessity for the market, however, can be proved neither by the perfection of its architectural or of its engineering features alone, nor by the excellence of its location alone. These are but elements which contribute to its power of reducing the price of foodstuffs to consumers, which is the only criterion for judging of the necessity of the market.

ESTIMATED COST NEAR \$10,000,000

It is estimated that the entire market structure will cost \$7,850,000. This does not include the Exterior Street viaduct or the actual track laying, elements which are not properly chargeable to the market.

The ground will cost \$2,000,000. A yearly rental of 35 cents per square foot of 1,970,000 square feet available for renting in the building alone will return 7 per cent. on the entire investment. This is more than is required to cover the fixed charges of interest and sinking fund, the charges for depreciation and repairs, and also the tax on the value of the ground.

Proposed

PROPOSED MUNICIPAL MARKET

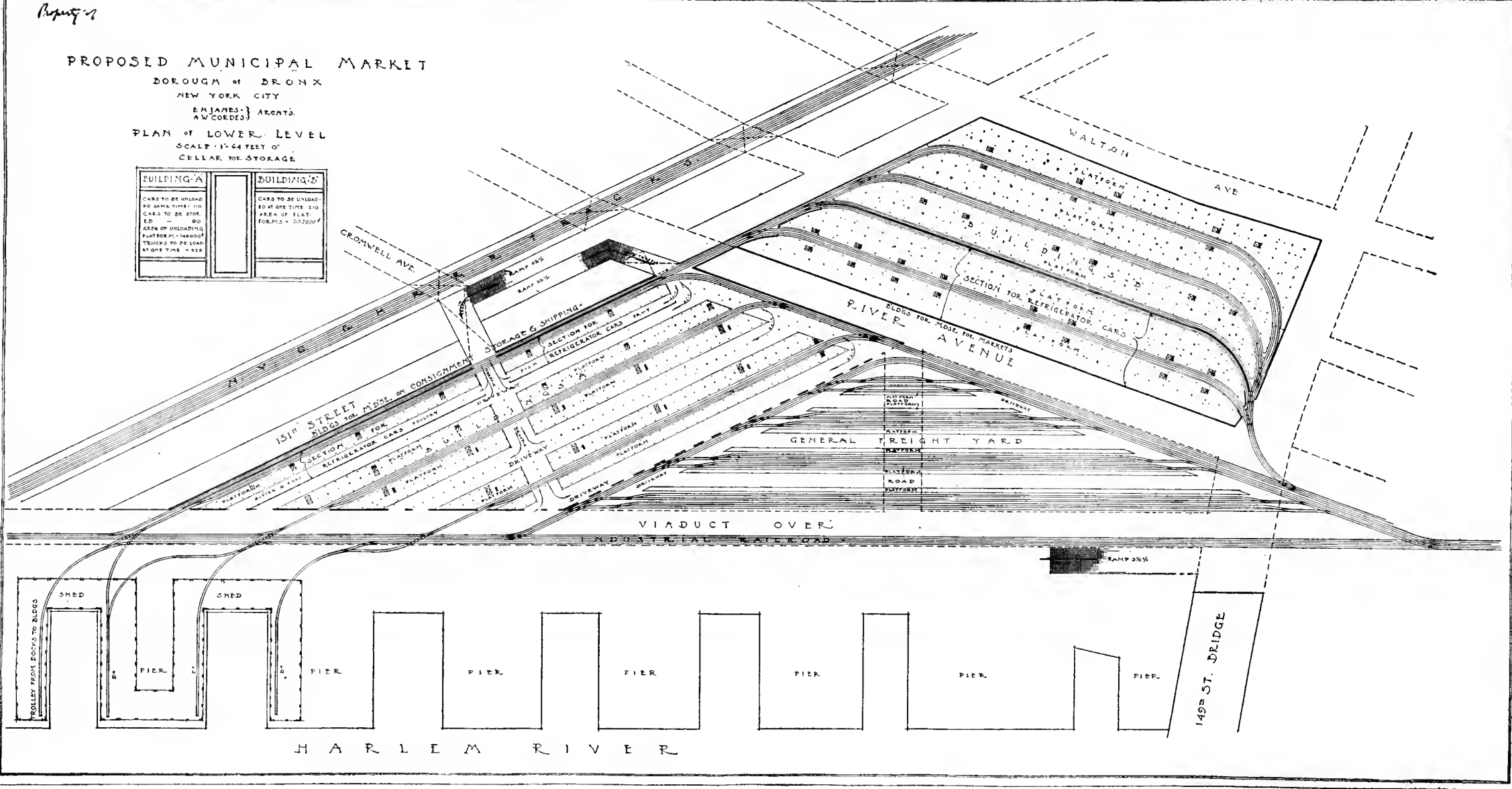
BOROUGH OF BRONX
NEW YORK CITY

BY JAMES J. ARCHER
AND CORDELL

PLAN OF LOWER LEVEL

SCALE 1" = 64 FEET
CELLAR FOR STORAGE

BUILDING A	BUILDING B
CARS TO BE UNLOADED SAME TIME - 110 CARS TO BE STORED - 90 SECS OF UNLOADING PLATFORM - 148000 TRUCKS TO BE LOADED AT ONE TIME - 110	CARS TO BE UNLOADED AT ONE TIME - 210 AREA OF PLATFORMS - 532000



THE ECONOMIES

The market, with its sales agents, will automatically perform the centralizing function which is now performed by the market agents and collectors, and, to a limited extent, by the various growers' organizations. This should eliminate, say, from 3 per cent. to 5 per cent. of the present retail price of goods.

The cost of repeated handling, after the goods reach the City, will be largely reduced by the proximity of the storage houses to the cars and boats. The cost of storage will be reduced by the centralization of the mechanical and refrigerating facilities.

The cost of insurance will be reduced by the modern structures. The losses now incident to the unavoidable exposure of goods, careless handling, loss of time and energy in obtaining the several articles of food from widely scattered places will surely be eliminated.

MARKET IS NOT TO PRODUCE REVENUE

It is not the purpose of the market system that it shall be used to produce revenue which may be spent on other phases of the City's activities—i. e., to be used as a means of indirect taxation. If the demand for space in the market exceeds the supply, so that the market is surrounded by stores which bring in higher rentals than those in the market, then the market occupants will be deriving a special benefit which, according to rigid economic laws, they will not voluntarily share with the public.

In that case the rents should be raised, or, possibly, some means of price regulation devised. To prevent the possibility of such a condition arising the market has been planned on a sufficiently large scale to accommodate all the trade at that point for many years to come.

The income then should be enough only to cover expenses, for there is no more equitable way of benefiting the members of the community than to let them enjoy the results of their own economy directly.

ESTIMATES OF SPACE NEEDED IN THE MARKET

The exact amount of trade that will seek space in such a market it is difficult to predict. We assume, however, that in a few years the market will be the main receiving and distributing place for the food supplies of the people of Manhattan above 110th Street and of The Bronx, and that the following figures form a fair basis for an approximate estimate of the size of the market needed.

An analysis of the amount of food products brought to this city in 1911 by one railroad indicates the average loads per car to be:

	Tons
1. Flour.....	18.9
2. Canned Goods.....	20.2
3. Butter.....	12.
*4. Eggs.....	11.1
5. Meats, etc.....	14.
6. Lard.....	12.8
7. Green Fruit.....	11.3
8. Condensed Milk.....	18.5
9. Poultry.....	10.
10. Dried Beans.....	13.1
11. Green Vegetables.....	10.
12. Dried Fruit.....	17.9
13. Popcorn.....	26.6
14. Nuts.....	10.5
15. Crackers.....	12.6
16. Cheese.....	9.3
17. Cereals.....	15.1
18. Tea.....	12.5
19. Watermelons.....	13.9
20. Salt.....	17.5

*420 crates of 30 dozen per car.

These averages, applied to the estimates of consumption of food in the city given by the Committee on Markets, Prices and Costs of the New York State Food Investigating Commission, indicate that the total consumption of these foodstuffs in the city by tons and carloads is approximately as follows:

	Tons	Carloads
Meat.....	440,000	31,400
Butter.....	69,500	5,792
Eggs.....	4,700,000 (crates of 30 doz.)	11,200
Flour.....	450,000	23,750
Poultry (dressed).....	50,000	5,000
Potatoes.....	375,000	31,200
Vegetables and Fruit.....	.....	29,638*
Cheese.....	14,500	1,560
Cereals.....	35,000	2,300
Canned Goods.....	625,000	31,000
Sugar.....	200,000—Distributed independently to great extent.	
Coffee.....	22,500—Distributed independently to great extent.	
Fish.....	75,000—Arrives by water mainly.	

* Approximate. Much of the fruit and vegetables are brought by ship.

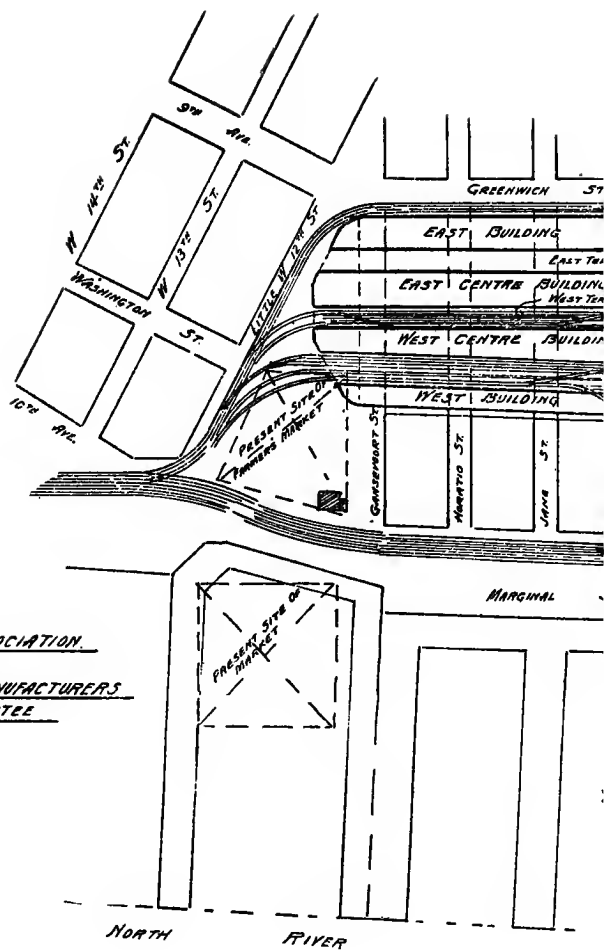
On the basis of the foregoing figures and the distribution of population in the city the following table gives a close estimate of the car-lot business that will come into the market. Some commodities that will probably come to the market by rail and others that will come by boat are not included.

FOODSTUFFS CONSUMED IN THE CITY THAT WOULD PASS THROUGH TERMINAL MARKETS.

Item	CARLOADS				MONEY VALUE		
	Entire City	Part of Manhattan not served by the Bronx Market	Bronx and Part of Manhattan using the Market		Entire City	Part of Manhattan not served by the Bronx Market	Bronx and Part of Manhattan using the Market
Year.....	1913	1913	1913	1940	1913	1913	1940 †
Population.....	5,000,000	1,300,000	1,500,000	3,000,000*	.....	.....	.....
Beef.....	† negligible	.....	.....	18,000	\$58,650,000	\$15,200,000	\$100,000,000
Butter.....	5,792	1,500	1,730	3,460	45,150,000	11,800,000	35,200,000
Eggs.....	11,200	2,900	3,350	6,700	45,000,000	11,600,000	27,200,000
Flour.....	23,750	6,100	7,100	14,200	20,000,000	5,200,000	27,000,000
Poultry.....	5,000	1,300	1,500	3,000	15,000,000	3,900,000	12,000,000
Potatoes.....	31,200	8,100	9,360	18,720	50,000,000	13,000,000	9,000,000
Fruit and Green Vegetables.....	29,638	7,700	8,900	17,800	4,632,000	1,200,000	30,000,000
Cheese.....	1,560	405	467	934	5,000,000	1,300,000	2,780,000
Cereals.....	2,300	600	690	1,380	90,000,000	23,300,000	3,000,000
60 percent of Canned Goods.....	18,600	4,850	5,600	11,200			54,000,000
Totals.....	129,040	33,453	38,697	95,934	\$333,432,000	\$86,500,000	\$300,000,000
Average per working day.....	404	105	122	300	1,040,000	269,500	960,000
Average per working day in business month.....	725	188	218	494	1,870,000	490,000	2,270,000

* Metropolitan Sewerage Commission estimates. † At present prices.

‡ 31,000 carloads distributed from independent warehouses.



PREPARED FOR
GANSEVOORT MARKET BUSINESS MENS ASSOCIATION.
WEST WASHINGTON MARKET ASSOCIATION.
CHELSEA ASSOCIATION OF MERCHANTS & MANUFACTURERS.
GREENWICH VILLAGE PUBLIC SERVICE COMMITTEE.

DIAGRAM SHOWING
THE OLD & NEW SITE OF
GANSEVOORT MARKET.
WEST SIDE - NEW YORK CITY.
J.G. GLOVER - ARCHT - N.Y.C.
PLATE No. 1

IV. BRIEF AND PLANS FOR A NEW WEST WASHINGTON AND GANSEVOORT MARKET

Submitted to Market Commission of the City of New York by Committee representing Gansevoort Market Business Men's Association, West Washington Market Association, Chelsea Association of Merchants and Manufacturers, Greenwich Village Public Service Committee.

NEW YORK, N. Y., May 20, 1912.

To the Hon. CYRUS C. MILLER, Chairman of the Market Commission appointed by His Honor, Mayor Gaynor, of the City of New York.

SIR:—The Legislature of this State at its last session passed legislation providing the Sinking Fund Commission of this city with authority to permit the use of the present sites of West Washington Market and Gansevoort Market for dock purposes, upon condition that it first establish suitable quarters for these markets elsewhere in the Ninth Ward of the Borough of Manhattan.

Complying with your invitation to make suggestions for such new markets, we beg to submit herewith our ideas in the form of plans:

GENERAL PLAN

The accompanying plans propose that there shall be acquired land as follows:

The triangular block bounded by Little West 12th Street, Washington, Greenwich and Gansevoort Streets	Assessed Valuation	\$522,500
The block bounded by Gansevoort, Washington, Greenwich and Horatio Streets	Assessed Valuation	526,500
The block bounded by Horatio, Washington, Greenwich and Jane Streets.....	Assessed Valuation	527,000
The block bounded by Jane, Washington, Greenwich and West 12th Streets.....	Assessed Valuation	537,500
The block bounded by West 12th Street, Washington, Greenwich and Bethune Streets.....	Assessed Valuation	430,500
The block bounded by West 12th Street, West Street, Washington and Bethune Streets	Assessed Valuation	575,500
A strip approximately seventy feet wide on the west side of Washington Street from Gansevoort Street to West 12th Street.....	Assessed Valuation	301,500
Total Assessed Valuation		<u>\$3,421,000</u>

Plate 1 shows the location of this land in relation to contiguous property, and tracking connections with a proposed elevated railway on the marginal way.

Plate 2 shows a cross section looking north.

The plan includes three buildings running longitudinally from the south side of

Little West 12th Street to the north side of Bethune Street, each 80 feet in width and 920 feet in length, and one building on the west side of Washington Street running from a point in the open square about 66 feet north of Gansevoort Street to the south side of West 12th Street, 60 feet in width and 760 feet in length. These building will be termed—for convenience—East Building, East Center Building, West Center Building, and West Building.

Two new market streets 60 feet wide are created running north and south between, and generally parallel to, Washington and Greenwich Streets, which will be called, for convenience, West Terminal Street and East Terminal Street. Four elevated tracks will traverse the terminal on Washington Street; four on West Terminal Street and two on Greenwich Street. These tracks will be about 4 feet below the Terminal Floor, bringing that floor on a level with the floor of the car. The trackage in the Market terminal proper will accommodate at one time 270 cars and 150 cars may be placed at one time alongside of platforms and be unloaded simultaneously. Thus there is railroad trackage at all times for an equal number of cars waiting to be unloaded, as are unloading, with the result of a minimum of switching time required, to obtain continuously the full capacity of the terminal.

The track connections with the main line are shown to the south of the Market, avoiding blockage and materially aiding the obtaining of the terminal's full capacity.

On the block bounded by West 12th Street, Washington Street, West Street, and Bethune Street is an ell building which will be termed for convenience the South Building, the two first floors of which are to be occupied by the Live Poultry Trade. This building runs east and west and is 140 feet in width and 366 feet in length. On the ground floor the building is divided by a new street 40 feet in width, which will be called, for convenience, South Terminal Street.

Four independent spurs of tracks from the main line are proposed to be run to this building, one each on West 12th and Bethune Streets and two on South Terminal Street. These spurs will accommodate at one time 30 cars.

Gansevoort, Horatio, Jane, and West 12th Streets, present city streets running transversely through the Market, will remain open thoroughfares and of their present widths. Washington Street will be widened 14 feet, Greenwich Street 25 feet and Bethune Street 40 feet over their present widths.

PLAN OF BUILDINGS

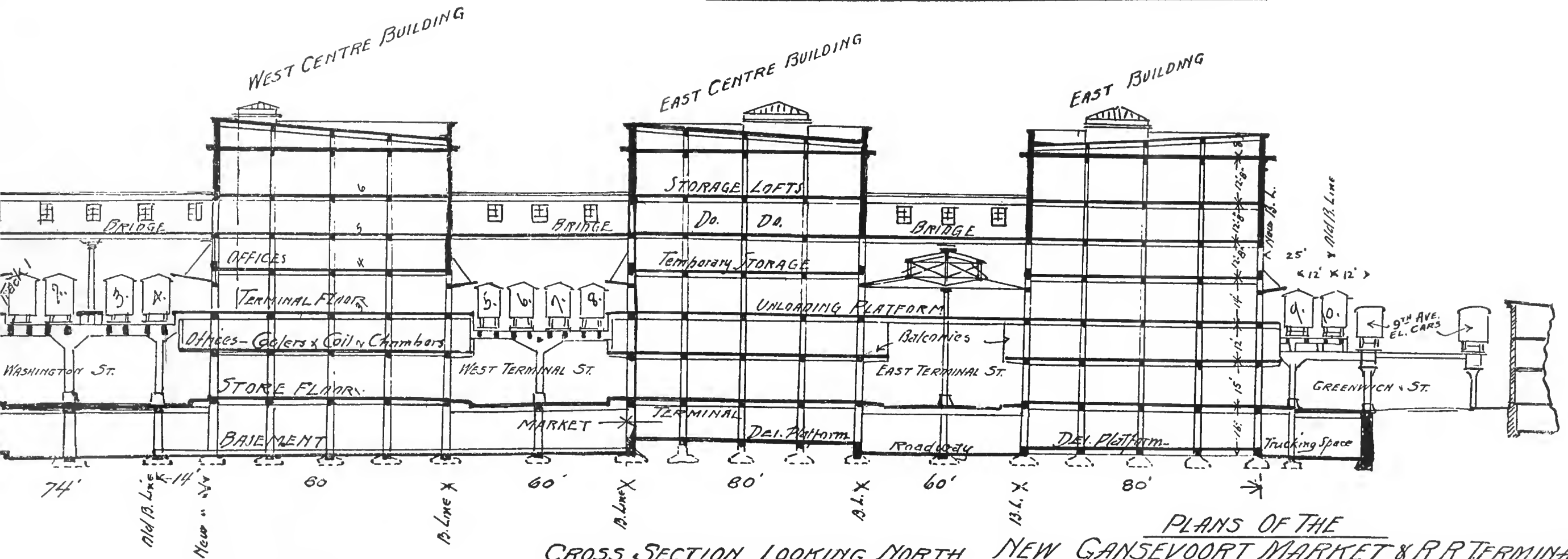
It is proposed to excavate that part of the land from the west side of Washington Street to the west side of Greenwich Street, and from about 60 feet north of Gansevoort Street to the north side of Bethune Street, forming the Basement of the main structures.

A portion of this basement will be used for the Farmers' Market, now occupying the open square; in this part the walks and driveways are so arranged as to permit the farmers to deliver their garden products direct from their trucks to the purchaser.

The other portion of the basement is to be used for the loading of trucks with the incoming food products from the unloading platforms above, and for the unloading of trucks bringing outbound freight. In this part will be two delivery platforms surrounded by driveways, permitting 275 trucks to back up and load at the same time. Two entrance driveways are provided with 5 per cent. grade and two exit driveways of $4\frac{1}{2}$ per cent. and 5 per cent. grades, respectively. The basement will have a headroom of 14 feet and will contain approximately 425,000 square feet of floor space.

The proposed Grade Floor consists of stalls and stores laid out in units of 20 feet by 20 feet. A dealer may occupy as many units as he desires to pay for. The Second Floor immediately under the Terminal floor will be rented in conjunction with the grade floor and will be occupied by the offices and refrigerators and lofts

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PLANS OF THE
CROSS SECTION LOOKING NORTH NEW GANSEVOORT MARKET & R.R. TERMINAL
SCALE: 1/32" = 1'-0"
WEST SIDE, - NEW YORK CITY
J. G. GLOVER, ARCHITECT, - N. Y. CITY

of the dealers. These stores will be connected by elevators and carrier systems of suitable design, with the Terminal floor and the storage lofts above.

These two floors together occupy a headroom of 27 feet and provide a renting space for Market and store purposes of approximately 440,000 square feet of floor space. Basement stores are also provided approximating 50,000 square feet of floor space, making a total for these purposes of 490,000 square feet of floor space.

On account of the nature of the Live Poultry business now occupying about one-fifth of the West Washington Market, it is proposed to segregate this trade in the South Building.

In the building on the west side of Washington Street local freight and express stations will be located.

The third or Terminal Floor is the unloading and loading floor of the Market. It consists of five great platforms entirely covered and unobstructed except by pillars and elevators. The first platform covers the entire floor space of the East Building, the East Center Building, and the intervening East Terminal Street and extends to the tracks, having a floor area 940 feet in length by 240 feet in width, and containing approximately 225,000 square feet of floor space, with a headroom of 14 feet. Elevators connect this platform with the truck platforms in the basement, with the stores and street below, and with the office and storage floors above.

The second platform covers the floor space of the West Center Building and extends to the tracks. It is 976 feet in length by 96 feet in width and contains approximately 95,000 square feet of floor space with a headroom of 14 feet. Elevators connect this platform with the stores and street below, with the office and storage floors above, and possibly with the basement.

The third platform covers the floor space of the West Building and extends to the tracks. It is 760 feet in length by 68 feet in width and contains approximately 50,000 square feet of floor space, with a headroom of 14 feet. Elevators connect this platform with stores and street below, with freight and express floors, and with the office and storage floors above.

The fourth and fifth platforms cover the floor space of the South Building and extend to the tracks. They are 340 feet in length by 62 feet in width each, and contain approximately 42,000 square feet of floor space, with a headroom of 14 feet. Elevators connect these platforms with stores and street below and with the storage lofts above.

The Fourth Floor is designed to be used for Offices and Storage Lofts, and will contain approximately 309,000 square feet of floor space with a headroom of 12 feet 8 inches.

The Fifth and Sixth Floors are designed to be used for Dry and Cold Storage and will contain approximately 309,000 square feet of floor space each, with a headroom of 12 feet 8 inches.

METHODS OF HANDLING FREIGHT

The methods by which the freight at this Terminal, inbound and outbound, will be most economically and expeditiously handled are not discussed by us at this time. The question as to whether it should be done by elevators and electric and hand trucks alone, or by the use also of some of the modern conveyor systems is left for engineers expert in that subject to consider.

Both incoming and outgoing freight would be handled at this Market terminal. Suggestion is made for sidings in the vicinity with a capacity of 50 cars accessible for inspection. One sample car of a shipment would be unloaded in the Market, and the other cars sold after inspection and reshipped without unloading. It is estimated

this would avoid unloading and rehandling in New York of a large quantity of fruits and vegetables.

BUSINESS CONDUCTED IN THE MARKET

The Market would contain a considerably greater amount of store and basement space than exists in the present Market, and within its confines would be carried on the following businesses:

Receiving and Delivering R. R. Freight and Express Stations.	Celery, Nuts, Delicatessen.
Farmers' Produce Market.	Dried and Salt Fish, etc.
Country Produce.	Market Supplies.
Dairy Products, Butter, Eggs, and Cheese.	Commercial Bank.
Western Dressed Beef.	Railroad and Steamship Ticket Offices.
Western Dressed Small Stock.	Telephone and Telegraph.
City Dressed Beef.	Refrigerated Lofts for surplus receipts during seasons of over-production.
City Dressed Small Stock.	Dry Storage Lofts.
Live Poultry.	Auction Salesrooms.
Dressed Poultry.	Brokers' Offices.
Apples, Western and Southern Fruits.	Commercial Offices.
	Restaurant.

GENERAL STATEMENT

In drawing up these plans we have had in mind not alone a structure to take the place of the present market buildings, but have endeavored to make suggestions in line with the acknowledged present and future needs of this city for the receiving and handling of its food supply.

It is desirable that a structure should be planned at this time that will greatly improve the present conditions for receiving and distributing this food supply and which will be capable of expansion as the need increases.

In meeting this problem it must be borne in mind that special conditions obtain in the handling of food products that do not apply to general freight, because of their perishable nature and the necessity of delivery to the consumer free from deterioration and spoilage at the lowest possible cost and in time for their daily consumption. These conditions may be specified as follows:

1. The railroad should be brought into the market and the food stuffs unloaded under cover and remain under proper protection until sold.

2. The quantity of certain perishable foods received and disposed of in a few hours is so great that adequate platform space must be provided for temporarily placing the whole of the night's receipts preparatory to their sale.

Investigation shows that, in their heavy seasons, five railroads handling the bulk of the perishable foodstuffs at piers in this city receive in one day:

220 Carloads of Vegetables and Potatoes.
175 Carloads of Fruit and Apples.
60 Carloads of Berries.
120 Carloads of Butter and Eggs.

These receipts cannot be removed as unloaded. Each receiver at the present time has a space allotted to him on the pier, or on the bulkhead, or under "Bonnets" in the roadway of West Street, or, finally, in the street itself, whether or not the night be stormy. On these spaces the goods are stacked during the five to eight hours of

unloading from 7 P. M. to 3 A. M. A great area is required for this purpose. At a stated hour when the unloading is finished and all receipts assembled on the receivers' spaces, at 3 A. M., the buyers appear, a gong is rung and the sale commences. These buyers have been hovering around, in the rain perhaps, for several hours. A large part of the produce is subject to weather of all kinds and dust and dirt from 8 to 10 hours. The bulk of the goods is removed by 8 or 9 o'clock in the morning.

The space used at the present time for vegetables alone, including pier, bulkheads, and street, is approximately 100,000 square feet, and this is totally inadequate for the proper and economical handling of the product.

The present Farmers' Market is on an open square, known as Gansevoort Market. Here produce is exposed for many hours to the elements and to the dust and dirt that are blown over them by the winds and storm. A considerable part of this produce is damaged by the heat of the summer and the extreme cold of the winter. This market in the new market terminal will be located in the basement, entirely covered and kept sweet and clean, and at a temperature of 55 to 60 degrees the year round. The handling of these products will, therefore, be under the most modern sanitary conditions. The present Farmers' Market occupies a space containing approximately 125,000 square feet. The space to be allotted to them in the new market will be at least of an equal area.

3. Adequate facilities must be provided to enable a vast number of trucks to load at the same time.

Each night in the heavy vegetable season, from 500 to 700 teams congregate in the vicinity of the vegetable and fruit piers on West Street. They begin to come from 11 to 12 o'clock at night and stand until the sale opens at 3 A. M. Mounted police are required to keep them in place and allow them to form in loading line when they have received loading passes. Great congestion exists. The pier is regularly so blocked as to endanger life and limb. The bulkheads are crowded with teams struggling to get in and out. One hundred is a liberal estimate of the number of teams that can load at one time, and the whole district at that time is a mass of congestion.

This situation is provided for in the new market terminal by the two great truck platforms approximately 800 feet long, in the basement, as shown in Plate 4, and heretofore referred to. Two hundred and seventy-five trucks will be able to back up and load simultaneously. Separate driveways in and out are provided at different ends of the market to avoid congestion.

4. Facilities should be provided for transferring products direct from cars to dry storage lofts without truckage; and especially for transferring certain classes of food products direct from refrigerator cars into refrigerated salesrooms and warehouses, without being exposed to a higher temperature and without being trucked through the streets.

There is no doubt that a large amount of general freight can be handled in the new market in addition to foodstuffs. Great quantities of goods now conveyed by trucks to distant storage on arrival of cars, and later trucked again to stores and warehouses, would, in this market terminal, be taken direct by elevators to storage lofts. Upward of \$100,000 in trucking charges would be saved yearly on this class of goods for dry storage in this one market.

This point is equally true of goods arriving in refrigerator cars and applies with even greater force, because of deterioration and waste occasioned by trucking of perishable goods. Details would be developed whereby such freight would be unloaded direct from refrigerator cars through cooled areaways of equally low temperature, into the refrigerated salesrooms and lofts in this market terminal.

It is well known by the handlers of foodstuffs that a great deterioration in perishable food products is occasioned by the necessity of trucking between the railroad

car and the distant store or refrigerator, with the consequent exposure to a higher temperature; and that a great loss by waste is thereby sustained yearly.

Dr. Mary E. Pennington, of the U. S. Department of Agriculture, in a recent address on the "Marketing of Perishable Products," made the following statements:

"Not so many months ago the country was in a ferment over the conservation of coal lands, water power, and forests * * *. Yet, I venture to say, should we undertake to reduce the figures of the waste of foodstuffs because of decay and deterioration between producer and consumer, the values of waterfalls and forests and coal mines would dwindle by comparison.

"The Department thinks it is justified in its belief that even so delicate a commodity as a carload of poultry, properly killed, picked, chilled, packed and refrigerated during transportation, is as certain to arrive in good order as is a carload of oranges. Eggs brought fresh to the packing house, chilled, shipped under refrigeration, arrive at the market, after a week in transportation, in better condition than the eggs from nearby towns collected in the hit-or-miss fashion generally followed by the farmer and taken to market as it suits his convenience.

"The study of the methods of handling poultry and eggs has been under way in the Department of Agriculture for several years. These commodities are not only becoming more and more popular as foods, but they are demanded by the consumer the year round, and, as they are seasonable products, the excess of the flush season must be conserved by cold storage if the market is to be supplied during the season of scarcity. From a monetary viewpoint, no other crop, except corn, is so valuable. Eggs alone are worth approximately \$500,000,000 per annum, and poultry is worth about half that sum. It is exceedingly difficult to estimate in dollars the amount of spoilage in any perishable food throughout the country and the year, yet we have evidence to show that between 8 and 10 per cent. of all the poultry and eggs raised are totally lost as foodstuffs before the consumer is reached. In addition to this there is the shaving in price due to deterioration in quality. We are, therefore, probably well within the truth when we place the loss on these two commodities as \$75,000,000 yearly. It is practically all referable to poor handling after the bird is killed or the egg laid."

"Delayed marketing, which is generally accomplished by the aid of 'cold storage,' is also being investigated. It has been found that when products are properly prepared for storage, and are put into the freezer or chill room while absolutely fresh, they can be kept in good condition from one producing season until the next. The conservation of foodstuffs during the flush season is an absolute necessity if we are to feed our people the year round as we have been feeding them. Scientific and practical experiments have indicated that when refrigeration is applied to the product while in perfect condition it remains in good condition until the next season of production arrives."

New York receives yearly, it is estimated:

Butter (pounds).....	73,000,000
Eggs.....	1,460,000,000
Fruits (pounds).....	638,750,000
Poultry and Game (head).....	109,500,000

The general custom and proper method of handling all of these goods is to ship them in refrigerator cars and place them on arrival in refrigerated salesrooms and warehouses.

At the present time eggs, butter, and poultry are shipped in refrigerator cars and in the heavy producing season are unloaded on to the piers and allowed to remain there, exposed to high temperatures, for several days. Decomposition commences at once with consequent waste and added cost to the consumer. This waste would be eliminated in the proposed terminal market.

Dr. Pennington states that 8 to 10 per cent. of all eggs and poultry produced in this country is lost yearly through improper handling. If we save only 2 per cent. of this loss it will amount in one year on the few products enumerated above to \$2,050,000; and the saving effected by the elimination of trucking charges to distant warehouses on the same items will amount to \$400,000 more. From these figures an idea may be reached of the tremendous saving that may be effected if proper facilities be furnished for handling all of the receipts of foodstuffs of this great city.

With such a market having facilities for connection with the proposed elevated line running along the marginal way, quantities of fruits brought in by steamship lines, and now trucked to refrigerated storehouses would be loaded from the boats to cars at the piers and shifted under cover to the refrigerated storage lofts of the market, again effecting a saving as against trucking with consequent deterioration.

5. Many stores in connection with such market terminal will permit of the elimination of a large amount of trucking charges, waste, and deterioration and will proportionately reduce the cost to the consumer.

This will be accomplished by the receipts of these dealers being brought to them direct by cars and delivered to their stores from the unloading platforms by elevators, instead of being trucked great distances.

It is estimated that \$200,000 is now paid yearly by the present occupants of West Washington Market in charges for trucking their goods from railroad sidings to their stands in the market. It seems reasonable to assume with the number of additional dealers the proposed market will accommodate, many of whom would be even larger receivers, that the saving effected by having railroad tracks direct to their places of business will approximate \$500,000 per year.

The present West Washington Market contains store space, not including their second floor, of approximately 91,000 square feet, to which might be added 50 per cent. for second floor space used, totaling 136,500 square feet.

The market proposed would have approximately 500,000 square feet of store, refrigerator, and loft floor space. Many other dealers will be accommodated in it.

SPECIAL EXCELLENCE OF LOCATION

The vicinity of the present West Washington and Gansevoort Markets is recognized as a central point from which the food supply of the city may be best distributed to meet the large demand of the downtown restaurant district and the uptown restaurant, hotel, and residence district. It is at the center of the steamship supply district. It is contiguous to all of the incoming railroad and steamship lines bringing in New York's food supply.

The proposed market is located on the Ninth Avenue elevated line, with the northern end two blocks south of the 14th Street station, and it is understood that the Interborough R. R. Company has agreed to place a station at West 12th Street, which will be at the southern end of the market. Fourteenth Street, Eighth Avenue, Hudson Street and West Street—all wide avenues—afford splendid thoroughfares for reaching it, with Gansevoort, Horatio, Jane, West 12th and Bethune Streets running

directly through it. Surface car lines run on both sides of the market by direct line across Fourteenth Street, thus making direct connections to the market with all subway and elevated lines. It will be one block from the Eighth Avenue surface line, and two blocks from the proposed Seventh Avenue subway.

EXPANSION

The blocks to the south of the proposed market are not at this time improved with expensive realty. The plan suggested is capable of gradual expansion in this direction as the needs of the city require.

RELIEF OF THE WATER FRONT

In addition to meeting the great need of the city for better market conditions, the building of this proposed market would accomplish the removal of West Washington Market from the water front, leaving this space free for long piers.

It would remove the receipt of food products from the water front—this being about one-third of the freight receipts of the city—and consequently probably release for steamship purposes some piers now used by the railroads.

FIRST STEP IN SOLVING PROBLEM

Such a market terminal would be the first step of this city in solving its great problem of economically receiving and distributing its enormous food and general supplies. With this one in successful operation, self-sustaining and paying a handsome revenue to the city, others will quickly follow, and New York City will have put itself in the foremost rank in carrying out the policy of bringing the producer closer to the consumer, and reducing costs to the minimum. With the certainty that their produce will be properly handled and deterioration and waste eliminated, and, with the logical result that they will receive a fair return for their products, the farmers of the country will be stimulated to greater production and lower prices will naturally follow.

To accomplish this object New York City should take the lead in a policy of improving transportation facilities with a resultant decrease of freight and express charges; in increasing, improving, and standardizing storage facilities for carrying surplus food products; and in providing means for the delivery of such products from arriving cars to market terminals, where they would be disposed of by direct sale or be placed under refrigeration without exposure creating waste and deterioration, and without drayage to distant warehouses.

SUMMARY OF RESULTS ATTAINED

The capacity of a market on these plans for accomplishing the relief sought is shown by a recapitulation of some of the foregoing figures:

Trackage alongside platforms so as to unload at one time	150 cars.
Total trackage at one time for.....	270 cars.
Unloading capacity each 24 hours.....	2,400 cars.
Surface on unloading platforms.....	400,000 sq. ft.
Capacity of unloading platforms.....	3,200,000 cu. ft.
Platform space equal to contents of fully loaded.....	1,850 cars.

Foodstuffs unloaded direct to refrigerated lofts without drayage.

General merchandise unloaded direct to storage lofts without drayage.

Time and expense saved by having capacity for loading 275 trucks simultaneously.

Foregoing statements show estimated savings of \$3,000,000 yearly. To this would be added much, as also heretofore indicated, that cannot be estimated. In addition,

would be the saving to the city, by lessening the wear and tear on city streets of trucking eliminated; by avoiding the present necessary cost to the city of widening streets by reason of trucking congestion. SUCH A MARKET WOULD, THEREFORE, BE PAID FOR INDIRECTLY IN SAVING TO THE PEOPLE IN THE COURSE OF 2 OR 3 YEARS.

COST AND EARNINGS OF TERMINAL

It is estimated that such a market would cost, inclusive of land and exclusive of railroad structure, \$8,610,832.

Space in such market would be valuable by reason of its railway connections and up-to-date facilities. It would contain over 2,100,000 square feet of renting floor space which, at even the very low figure for such facilities of 40 cents per square foot, would yield an annual income of \$840,000, or 9½ per cent. on the investment. It will, therefore, be not only self-sustaining, but profitable to the city, and allow of an amortization fund which will eventually wipe out the investment. Rents would then be lowered, still further reducing the cost to the consumer.

RELATION TO GENERAL TERMINAL SCHEME

The proposed plan is primarily adapted to the 35th Street R. R. Terminal and elevated line along the marginal way which has been proposed. It would form one, and probably the largest, of the business terminals along the route of the elevated, as suggested in that plan.

At the same time, if the Unit Terminal Plan, as also suggested, should meet with the approval of the Board of Estimate this proposed West Washington Market terminal would be equally adapted to that plan.

RECOMMENDATION THAT PART AT LEAST BE BUILT IMMEDIATELY

In view of the close approach of the date of expiration, in June, 1913, of the permission of the U. S. Government for the extension of the river pierhead line for certain piers, and the consequent pressing need of the Dock Department for longer piers; and in view of the possibility of the Board of Estimate and Apportionment needing further time for determination of a general terminal plan for the city; and in view of the fact stated heretofore that the proposed West Washington Market terminal will adapt itself readily to any solution of the problem that may be reached:

WE RESPECTFULLY RECOMMEND that you suggest and urge upon His Honor the Mayor and the Sinking Fund Commissioners that action be immediately taken upon that part of the proposed plan included in the area bounded by Little West 12th, Washington, Jane, and Greenwich Streets, and in the area bounded by West 12th, Washington, Bethune, and West Streets; that a market be built on these areas in conformity with the plans herewith submitted, which will care for the tenants of the present West Washington and Gansevoort Markets and allow expeditious use of those sites for piers. The completion of the market on the lines proposed can then await the final determination of the general problem by the Board of Estimate and Apportionment.

Respectfully submitted,

P. MAXWELL SAYFORD,

Secretary to the Committee.

Representing

GANSEVOORT MARKET BUSINESS MEN'S ASSOCIATION.
WEST WASHINGTON MARKET ASSOCIATION.
CHELSEA ASS'N OF MERCHANTS AND MANUFACTURERS.
GREENWICH VILLAGE PUBLIC SERVICE COMMITTEE.

V. PUBLIC MARKETS IN AMERICAN CITIES

By J. F. Carter, Secretary, San Antonio (Texas) Chamber of Commerce

A study of the marketing of farm products, other than cereals, wool, and cotton, brings one to the conclusion that marketing produce in the United States is in a lamentably chaotic condition.

In very few cases do we find the public markets receiving regular shipments of food products direct from communities other than their own. In all cases we find the market master, the man who should be an executive head, a very much underpaid individual; in almost all cases he is nothing but a janitor, or the slightly elevated boss of a janitor or force of janitors.

We find the first development of a market is the "curb" variety—a stated place where the producers gather with their wagons and offer their wares. In some instances we find the produce bought by jobbers, in other cases by the retailers, and, lastly, by the ultimate consumer.

The next development shows a building in which are stalls on two sides of a long aisle, where producers or commission men or retailers, or all, offer their goods to the consumer. And the next development is the allotment of curb space to farmers outside the market. In the great majority of cases the markets are owned and regulated by the municipality, with here and there a market owned and operated by a private company.

A questionnaire has elicited the following information concerning the public markets of this country and Canada:

BALTIMORE, Md.

The Lexington Market in Baltimore is the one to which that city points with pride, though there are several other market houses. About 600 wagons are accommodated at the curb space at this Lexington market, and there are 1,200 booths within. No accommodations are given to the public in the way of rest rooms, restaurants, etc., but the idea of comfort stations is now being discussed. The market master receives a salary of \$1,400, while the assistant market masters receive \$400 to \$900 per annum; the cleaners are paid as high as \$660. In 1911 the Lexington Market's expenses were \$9,682, while the receipts were \$17,209, leaving a very comfortable surplus. It is estimated that 50,000 people visit this market on market days. There is no delivery service. The rental and license bring \$25 per annum to the city as revenue from each stall.

BUFFALO, N. Y.

There are four public markets in Buffalo owned and controlled by the city. They are considered a success, as "the people get larger assortment at lower cost," this lower cost brought about "by intense competition." The market master is paid \$2,200 per annum; total expenses in 1911 were \$19,000 and total receipts \$63,000. The stalls in the main building are rented at \$80 to \$150 per year, those not in main building renting for \$60 to \$150 per year. There are 556 booths in all. During the producing season from 500 to 600 farmers use the markets daily and sell from wagons. The commission men act in a friendly manner toward the market; outside goods are shipped in by various dealers in the market. To each farmer a 6-foot wagon space

is allowed; single wagons are charged 15 cents a day; teams 25 cents a day. Their space is reserved daily until 7 A. M. If at that time they are not on the market the space is rented to a huckster. The booth holders in the brick building take out a yearly lease, payable quarterly, in advance. The rent is fixed by the Board of Aldermen through its market committee and superintendent of markets. The main building is open at 4.30 A. M. from April 1 to November 1, and from 5.30 from November 1 to April 1. Only such lines are allowed to be sold on the market as the Board of Aldermen and the superintendent of markets agree to. The main market building closes at 2.30 P. M. Booth holders along streets are open until 4 or 6 P. M. Besides the booths in the main market building, the booths contiguous to the streets and space for farmers, there are hucksters who do business at tables. Weekly tickets are issued to them payable in advance. The charge varies from \$1 to \$2 per week. Besides the superintendent of markets there are two clerks at each market for collecting, at salaries of \$1,100 per year; two sweepers at \$2 per day, and a lady caretaker at \$360 per year.

BURLINGTON, IOWA

Fifteen years ago the public market in Burlington was abandoned through lack of interest, and the building was later used as a fire station and finally was torn down and replaced with a modern fire station. Recently labor interests in this city procured a market ordinance, but have gone no further in the matter, the presumption being that they have been unable to secure agreements from the growers to bring their produce to the market.

CALGARY, ALBERTA

The market at Calgary has been in operation only since February, 1912. It is owned by the municipality and is governed by rules and regulations issued by the City Council. The salary of the market master is \$840 per annum. A rental of \$25 per month is charged for the booths, of which there are 24. About 75 farmers patronize the market at a time, and shipments, consisting principally of potatoes and vegetables, are received from other communities. There is no apparent opposition from commission men and produce dealers. Very little effort is made to keep down prices. Hucksters are permitted in the market and those who, together with some of the farmers, display their goods on a table or stand pay a fee of 15 cents per diem. Calgary is one of the new cities of the Canadian West, and it is believed that the completion of several hundreds of miles of interurban railways in the country surrounding the city will place the market on a better basis, as these lines will be of great assistance in bringing the farmers' produce from a distance.

CLEVELAND, OHIO

There are three markets owned by the city and one owned by a private corporation in Cleveland, all of them well patronized by the public. The increase in custom, however, has not been in proportion to the increase in population. The following data applies to the municipal markets. The market master receives a salary of \$1,800 per year. The annual expenses are \$13,550 for the past year, in which amount no allowance is made for taxes, depreciation or interest on the investment. These expenses include labor, supervision, cleaning, fuel, light, repairs, etc. The three markets furnish a total of about 500 booths, with unlimited curb space for farmers. The booths rent for from \$60 to \$200 yearly, according to location. About 1,100 farmers are allotted 7 feet at curb in the market district at a rental of \$10 per year. Renters of the stalls in the market houses receive shipments from other communities, and wholesale dealers are friendly to the market. Competition between the 500 renters of stalls

and the fact of their having but a low rent to pay, together with no charge for telephones and no delivery service, keeps down the prices.

Cleveland boasts of having the handsomest market house in the world, its doors having been thrown open in early November, 1912, this West Side market taking the place of the one which has served for half a century. Its cost was \$500,000, exclusive of the site, which cost \$180,000. There are 110 stalls; three aisles of meat dealers occupy the stalls in the center of the floor, while butter, egg, and poultry dealers are allotted the stands along the side walls. The fish market is in the northeast end of the building, and the grocery department is just across the floor. All stands are uniform as to size and equipment. The stands are of enameled brick with marble counters. The floors inside the stands are cement, while the aisles are of tile. The entire building is lined with white tile.

None of the stalls has telephones, it being the belief that the use of telephones would tend toward costly delivery and credits.

The shed for fruit and vegetable dealers will adjoin the main building, and will not be complete until spring of 1913.

CHAMPAIGN, ILL.

The public market in Champaign is owned by the city, and the rules and regulations under which it is operated are governed by city ordinance. The market building and stalls were erected by the Chamber of Commerce. There are fifteen stalls, for which is charged a rental of 15 cents per diem. Temporary sheds may be built on certain adjacent parking, and for these stalls a daily charge of 25 cents is made. The number of farmers using the market varies from half a dozen to all that can be accommodated. Commission men and produce dealers are friendly toward the market; two of the most prominent grocers in town worked for it. No shipments are received from other communities outside the county. Prices are kept down by its being an open market and subject to bargain hunting. The people of the city appreciate the opportunity to buy direct from the producer.

CHESTER, PA.

The little city of Chester has a public market owned by a privately organized company and regulated by this company. The market master receives a salary of \$100 per annum, and the other expenses consist of interest on the investment, taxes, and general maintenance. There is a license charge made of \$1.00 per week for each booth, and in the market there are 100 booths. The market is used at the present time by about 20 farmers, and reports from Chester are to the effect that the commission men are opposed to the market.

CINCINNATI, OHIO

The public markets of Cincinnati number four, all owned by the city, the rules and regulations being governed by ordinances passed by the City Council. The annual expenses of \$12,000 per annum include the salary of the market master, which is \$900, and repairs to market houses, heat, light, and miscellaneous expenses. Inside stalls, which are occupied by the butchers, butter vendors, etc., bring a yearly rental of \$100, and a yearly payment of \$15 entitles the payer to a stand 6 feet wide on the curb. A certain amount of space is set aside for farmers and truck gardeners, and they may occupy this space free of charge. Approximately 500 farmers use these markets. Commission men and produce dealers do not clash with the markets, and, during the season, commission men receive shipments of fruits from other communities at the market houses. The success of the Cincinnati public markets is un-

questioned, the city receiving an average net income from them amounting to \$1,000 yearly, and they make it possible to place all foodstuffs before the class of people who need them most.

COLUMBUS, OHIO

There are four public markets in Columbus, Ohio, all owned and operated by the city. They are the Central Market, 148 stalls and stands; North Market, 237 stalls and stands; East Market, 139 stalls and stands; West Market, 81 stalls and stands. They are used for various kinds of business—meat, butter, eggs, cheese, bakery products, hominy, fruits, and vegetables, fish, honey, flowers, poultry. The number of people employed is over 2,000. Receipts from all markets in 1911 were \$28,998 and expenses were \$16,183. The commission men are friendly to the market, but attention is also called to the fact that commission men occupy the booths, and that there are only 16 curb stands for farmers. The report from Columbus says that the lowering of prices by the market is "not perceptible."

DAYTON, OHIO

There are three successful markets in Dayton, one owned by private individuals and two owned by the city. Two of these markets being in the downtown district, the market days are divided, the older market being open on Tuesdays, Thursdays, and Saturdays; and the other, known as the Wayne Avenue Market, being open on Mondays, Wednesdays, and Fridays from 5 to 10.30 A. M. The older of these two market houses was erected almost 40 years ago and has had no recent improvements. Its vegetable stalls are rented for \$100 per year and the butcher stalls for \$250 per year. The Wayne Avenue Building is a recently completed structure costing \$35,000, and the stalls rent from \$12 to \$20 per month. The downtown district also contains eight or ten squares, where curb spaces are auctioned off in May of each year at prices ranging from \$15 to \$300 per year for each space. The income from these rentals is approximately \$30,000 each year, while the expense approximates a total of \$2,600 a year, making a good profit to the city. The Arcade Market Building is a model market, having a complete modern cold storage plant in the basement and affording some 12,000 square feet of cold storage space. It is open from 6 A. M. (or earlier) to 6 P. M. every day, and until 10 or 11 P. M. on Saturdays. Vegetable stalls are rented for from \$6.50 to \$8.75 per month; butcher stalls, from \$35 to \$40, including cold storage. There are 200 stalls in this market, and the annual rental receipts amount to about \$20,000 per year. The public market in Dayton has been established since 1815 and is patronized by all classes. Prices are slightly lower than those of the retail dealers, and the produce is always clean and fresh. The markets are supplied from the immediate country, and no shipments from other communities are received. Commission men are friendly.

DENVER, COL.

The market in Denver is owned by the city, and rules and regulations are adopted by ordinance. It is now considered a success, though formerly it was operated by private parties, and failed to satisfy the gardeners and general producers. The market master receives a salary of \$100 per month, and, besides his salary, the salaries of an assistant and of one police officer are paid, the cleaning being done by the street cleaning department. A minimum rental of \$2 per month is made for booths, of which there are 238 under corrugated iron roofs. A large number of farmers use the market during the season, which extends in Denver from May until October. Commission men and produce dealers act friendly to the market, which, however, does not receive commodities from any other community.

DES MOINES, IOWA

The Des Moines public market is owned by the city and governed by city ordinance. A new market house is now in course of construction, and, upon its completion early in 1913, will afford 76 booths. During the present season the market has used a street space, and has been patronized by 30 wagons in one day. The annual expense of the market is estimated at \$2,000, of which the market master receives \$1,400 as his salary, and the rest is absorbed by such miscellaneous expenses as payment for extra help and livery hire for scale inspection. Shipments of peaches, apples, potatoes, etc., in carload lots, are received from other communities. The market has had no trouble with commission men, but is considered eminently successful in eliminating the middle man to a great extent. Prices are kept down by competition, which is aided by closing the market promptly at 1 p. m.

DETROIT, MICH.

In Detroit there are two markets, both owned by the municipality. In regard to their success comes the reply: "Yes, because they have been successfully operated for many years." The market master gets a salary of \$900, and the total expenses of the two markets in 1911 were \$6,474. Neither market is enclosed, each being nothing more than a cement foundation with a raised walk, forming a cross in the center of a square city block, the walks being about 60 feet in width, to which all wagons back, permitting the customers to pass around and examine the products and ascertain the prices. These walks are sheltered by roofs. There are no booths or stands. In the case of Detroit, there appears to be the nearest approach to direct marketing from the producer to the consumer.

DULUTH, MINN.

The market at Duluth is owned by the city and is regulated by the City Council. It is of recent establishment, having been opened in Duluth in the middle of the year 1912. Prospects are good, but no authoritative statement can be made. The market was opened in the Armory, and small, covered booths are used in two other markets. In the Armory building, which is known as the Main Market, as many tables as are necessary are placed, there being eight at the present time. At the close of the summer season of 1912 about 25 farmers were using the market daily. No plans had as yet been made to receive shipments from other communities, the market being open principally for the sale of locally produced commodities.

DUBUQUE, IOWA

The market in Dubuque has been maintained for more than 50 years, and it is patronized by all classes of people. Early in the morning, particularly on Wednesdays and Saturdays, swarms of buyers may be seen coming from all directions with baskets and carts to get first choice at low cash prices of all the goods displayed. Wagons of the country vendors of vegetables, fruit, flowers, poultry, meats, butter, eggs, etc., back up near the curb in front of stores near the market house. On the morning when the count was taken more than 300 teams were counted within ten minutes, and the ones lined up against the curb would have occupied more than 16 linear city blocks. The market house is modest in character, but the market is used to the evident satisfaction of the people in effecting economies.

FORT WAYNE, IND.

Taking the place where an old market house stood, Fort Wayne has constructed a new building for market purposes, the funds for this purpose having accumulated

over a period of years. The building is 450 feet long and 27 feet wide, and is built of concrete. The pavilion contains public toilet rooms and a smoking room. The market teams back up to the curb along the house and the purchasers have a passageway from which they may buy. Between the separating columns are tables built of concrete, which are used for market purposes. No reports are obtained from Fort Wayne as to the cost of occupancy of booths nor as to the expense of operating the market.

GRAND RAPIDS, MICH.

Grand Rapids makes the claim of having the largest wagon-market in the world, not only being self-sustaining but a profit-producer. It is owned and operated by the municipality. The market master receives \$1,000 per year, the annual expenses of the market being \$4,000. The stall rents are from \$5 to \$25, there being 760, of which 372 were rented in 1912. Farmers using the market number from 100 to 200 per day, paying a daily entry fee of 25 cents. The commission men are friendly and co-operate. Goods are shipped in from other localities during out-of-season periods, these being fruits and vegetables. The total annual income approximates \$10,000. Every effort is made to attract, the buildings being repainted each year.

GREENSBURG, PA.

The market at Greensburg is a curb market operated under the Board of Trade, the Secretary acting as market master without additional salary. This market is about a block and one-half in length, and is used by an average of 25 to 30 farmers. No charge is made for stands, and the market has no expenses. It is considered a success in reducing the high cost of living by bringing the consumer in direct touch with the producer, while the effort to keep down prices by competition between the produce dealers and the producer is aided by the formation of a Women's Marketing Club. Commission men and produce dealers are opposed to the market. It does not receive commodities from other communities.

HAGERSTOWN, MD.

In Hagerstown a successful market, well patronized by farmers, brings the city a cash revenue of \$2,600 per year. The annual expenses, amounting to \$700, are for light and heat, in addition to the market master's salary of \$600. The 100 booths in the market house may be rented by the year at from \$5 to \$10, while the farmers pay 10 cents per day for space if they do not care to rent stalls. The number of farmers using the market is, in the height of the season, 600 or 700, while during the cold months and in bad weather the number may drop to as low as six or seven. Competition is encouraged by granting permits to a number of persons to sell the same product, and then placing them in adjacent stalls. This is the only method used to keep down prices. Commission men and produce dealers are friendly toward the market. During the spring months shipments of southern vegetables are received and fish is shipped in during the entire year.

HAMILTON, OHIO

Hamilton has an open market, operated under the direction of the city. The only expense attached to this market is the market master's salary of \$360 per year. It has between 150 and 175 booths, for the use of which no charge is made. Some shipments of fruit are received from other communities, and there is no friction with the commission men and produce dealers. As a rule, prices are slightly less than those of the dealers; and the market, which is an old institution, is well patronized.

HAMILTON, ONT.

The public market of Hamilton is owned by the city, and is governed by rules and regulations issued by the Council of the Corporation of the City. The market clerk receives a salary of \$1,900 per year and secures his own help. In addition to this expense is that of the caretaker, who receives \$720, and repairs amount to from \$300 to \$1,000 annually. This market is kept strictly for farmers and butchers. During the busy season it is patronized by from 300 to 600 wagons in one day. No shipments from other communities are received and nothing is sold in the market except the produce grown by the farmers. Prices are controlled by supply and demand.

INDIANAPOLIS, IND.

The market of Indianapolis is owned by the city and is considered by all to be a success, city ordinances governing. The annual expenses of the market are \$12,500, of which the market master receives \$1,320, the remainder being applied to an assistant, four janitors, two engineers and firemen, light, heat, and garbage removal. The rental charge for booths is from \$25 to \$150 per year. There are 615 booths inside the building and 300 curb stands for farmers, for which a charge of 25 cents per diem is made. The statement which the writer received and the investigation which he has made show that the commission men and produce dealers are opposed to the market. The market receives shipments of tropical fruits and vegetables from the South, and every effort is made to hold prices down by competition.

JOILET, ILL.

Established by the municipality and operated under the direction of the city, the public market of Joilet started last year under successful conditions, but, for reasons unknown, interest during the present year has perceptibly decreased. The chief expense is the market master's salary of \$75 per month. During the summer season 25 to 50 wagons occupy the open market and pay a charge of 10 cents per wagon, while the rental for winter quarters in a commodious one-story structure, originally built for a skating rink, is according to the space used. To a limited extent shipments are received consisting of fish, apples, eggs and potatoes. Commission men and produce dealers are disposed to be neutral. Prices are kept down by the encouragement of wholesome competition.

KALAMAZOO, MICH.

An unsuccessful public market is operated by the city on one of the public streets. It caters largely to the hucksters and small dealers, neglecting the retail buyers. This has led to the formation of plans for a market building, to be operated by the city, with the purpose of supplying the retail consumer. The present market is patronized by about 75 farmers and truck gardeners daily. It does not receive shipments from outside communities, and makes no effort to keep down prices.

KANSAS CITY, KANS.

There is here a public market which is owned, however, by a stock company, and the rules and regulations are established by this company. The market may be considered a success when it is stated that it has paid to the stock company four 6 per cent. dividends in six years and has set aside \$4,000 as surplus. The market master receives a salary of \$480 and the annual expenses of the market, including this salary, are \$1,800. The market building proper is occupied by wholesale farmers, but about 75 farmers gather each morning at the curb, for which they pay 25 cents per

morning, or from \$9 to \$12 per season, for wagon space of 7 feet, this latter payment giving the farmer a regular place to stand. Commission men are friendly and the market receives shipments from other communities, principally fruit, vegetables, butter and eggs. No attempt is made to hold prices to a minimum.

KANSAS CITY, MO.

The public market in Kansas City is owned by the city, and the rules and regulations are made by city ordinance.

The market master receives a salary of \$1,800 per year, and the annual expense of the market is \$10,000, which includes the salary of the market master and those of scavenger, janitors, matron, night watch, and the cost of supplies and repairs. About 2,500 or 3,000 farmers patronize the market, about 250 of them being present each day. There are 140 booths, for which a rental of \$2 per front foot per month is charged, and the farmers all pay the market a fee of 25 cents on each wagonload of produce marketed. Commission men and produce dealers are generally opposed. The market receives shipments of fruit and vegetables, and, while it makes no direct attempt to keep down prices, they are reduced as a result of competition.

LANCASTER, PA.

There are six markets of a public nature in Lancaster, one being owned by the city and five by private companies. The rules which govern that owned by the city are used substantially by the five private companies. The markets are all considered successes, as they are paying properties for the owners. The market masters receive an average of \$1 per day. Information of such character was received that an estimate cannot be made of the annual expenses of the market, but they consist of the salary of the market master, taxes, fire insurance and interest on the investment. The markets are not open every day, sometimes opening two days a week and at other times three days. The booths are sold to the highest bidder, the average price being \$15 per annum for use one day each week. If the market is open two days and the booth is used two days each week, the price is \$30. There are about 200 booths in each of the six markets. Farmers rent the booths at the regular price, some making their stands at one market and some of the farmers using more than one market. Commission men use the market the same as the farmers, and receive shipments of fruit, potatoes, fancy vegetables and fish from outside communities.

LETHBRIDGE, ONT.

Five years ago an attempt was made to operate a public market in Lethbridge, but it was not a success, owing to the competition of Chinese vegetable peddlers. Since the abandonment of this market, however, the growth of vegetables and garden truck has increased rapidly and drafts of plans for a new market building have been prepared, with a view to the reestablishment of a public market.

LINCOLN, NEB.

Opposition on the part of the gardeners at Lincoln has prevented the success of the curb market there. This opposition arose as the result of a misunderstanding of the purpose of the market, the growers having gained the impression that it would favor the wholesale and retail dealers to the prejudice of the growers. This market is located on the curb and no expense attaches, the position of market master being filled by one of the sanitary inspectors of the Board of Health. A few of the gardeners paid a fee of \$1 for the reservation of a certain space for their use, but the majority stationed themselves in any unused space and paid no fee.

LITTLE ROCK, ARK.

A private enterprise, known as the City Market & Arcade Company, has been organized in Little Rock, and is at the present time building a market house and arcade on a block of ground in the heart of the city. The expenses of this project will amount to about \$400,000, and it is expected that the building will be complete in the spring of 1913. No further information is at present obtainable.

LOUISVILLE, KY.

The public market in Louisville is a private stock company, known as the Gardeners' and Farmers' Market Company, 90 per cent. of the stock of which is owned by truck farmers around Louisville. The market master receives a salary of \$1,500 per annum. No report could be obtained from the company as to the annual expense and the analysis of this expense. Unlike many markets, the prices of booths are not set, but the booths are sold at auction each year. There are between 500 and 600 booths. Between 300 and 400 farmers use the market daily, and from all appearances the commission men and produce dealers are friendly to the market, which receives no shipments from other communities.

MADISON, WIS.

The city of Madison opened a public market in 1911 in a building measuring 130 by 75 feet, and provided with wash rooms, toilet rooms, tables for luncheon, smoking rooms, etc. Madison had been practically in the hands of the provision merchants and commission men, and an effort was made by circularization of farmers to break the hold which the local dealers had. The response was a large one, and to-day Madison is enjoying a direct trade between producer and consumer. The market is open from 7 A. M. until 6 P. M. every day except Sunday. The charge per day for space is 25 cents. In cases where hay or wood is sold the weight or measure must be certified by an official of the city, and a certificate must be given, which costs 10 cents. Wagons for the sale of produce are prohibited the use of public streets or alleys away from the market place. Wisconsin produce cannot be sold in the market by any other person than the producer.

MEMPHIS, TENN.

The public market of Memphis is owned by the city and the rules and regulations are governed by ordinance. It is a well-patronized market and the receipts pay all expenses and leave a surplus to the city. The annual expenses of the market are \$6,300, being divided as follows: Interest on bonded debt, \$3,000; market master and janitor, \$1,680, of which the market master receives \$1,200; light, \$1,200; miscellaneous, \$420. There is a regular charge of \$12.50 per month for booths, of which there are 30. Farmers to the number of 300 to 400 use the market, taking stands in the market yard and selling to the consumer and to hucksters. Commission men are deemed to be friendly, as they buy from the farmers and very often sell to the hucksters. The market receives no shipments from other communities.

MILWAUKEE, WIS.

Many years ago a large market was maintained in this city, but with changing conditions it became unpopular and was finally abandoned. Lately a Market Commission has been appointed by the Mayor, with a view to establishing several markets throughout the city. Certain sites have been selected for this purpose, but the

project is not sufficiently advanced to furnish any data. The object of establishing these markets is to bring food products that are raised in the immediate vicinity of the city more directly to the consumer, and thus decrease the cost of living.

MONTGOMERY, ALA.

Montgomery, the capital of Alabama, has a public market which was closed several years ago and is lying idle and vacant. Its abandonment was due to the growing tendency to patronize hucksters and street peddlers, the public not coming to the market. This market occupies the entire ground floor of the City Hall, which covers half a block.

NASHVILLE, TENN.

The city of Nashville owns the public market in that city and it is regulated by city ordinance. The market master receives a salary of \$80 per month. The rental for the booths in this market, of which there are 150, is \$125 per year. Farmers sell their produce from their wagons around the market, and several commission men have wholesale stalls in the market house. Some shipments are received from other communities. Prices in Nashville are reasonable, and it is considered that the market acts as a regulator of the prices of foodstuffs.

NEW ORLEANS, LA.

New Orleans has had a public market since the first year of the 19th century. The market house was ruined by a hurricane and rebuilt in 1812. One after another was built until to-day there are 23 markets owned by the city and 11 privately owned through franchise from the city, by virtue of which franchise they will revert to the city in a period of years. New Orleans is surrounded by a large area of market gardens, which supply fresh vegetables and fruits at all seasons of the year. The existence of two large public abattoirs allows the selling of meat without large investment, as a stall may be rented for 50 cents per day, and a butcher may have his cattle killed by payment of \$1.00 per head to the abattoir, this price including storage for ten days. The price for stalls (meat and vegetable) is 50 cents per diem; fish and game stalls rent at 15 cents per diem, and fruit stalls at 2 cents per square foot. Markets are open from dawn to noon, after which cleaning is done. Peddlers are allowed license, but cannot operate until after noon.

There is much agitation about selling the markets, instead of issuing bonds to build new ones to take the place of old; but this agitation is being stoutly opposed by those who fear the "meat trust." The estimated revenue for 1912 from the markets is \$190,000, but no definite reports were received on expense.

NEWARK, N. J.

There is a public market in Newark which is owned and operated by the city, ordinances being adopted for the purpose. It is considered a success, both from the viewpoint of "living cost" and the returns to the municipal government. The market master is paid \$2,400, the total expense account being about \$23,000. Against this there showed receipts in 1909 of \$53,251, in 1910 of \$57,820, and in 1911 of \$57,304. The expense sheet consists of salaries, light, heat, garbage disposal, and maintenance. There are 125 booths. There are three "market days" per week, at which times there are about 300 farmers ready to sell. All reports show commission men to be friendly. The market sells no produce from other communities or sections of the country.

NEW BRUNSWICK, N. J.

At the present time there is no public market in New Brunswick, but local business men are now incorporating a company for the purpose of establishing a market, one of the purposes of which will be to keep down the prices of food.

NEW YORK CITY

For description of New York's public markets see Report, Section VII.

NIAGARA FALLS, N. Y.

The public market in this city is owned by the municipality. It draws from a rich fruit and vegetable-producing country surrounding the city, and receives shipments of these products from country within 20 miles in radius. The market master receives a salary of \$70 per month. The annual expenses amount to \$1,000, and include the salary of market clerk and supplies. This is a curb market. A charge is made of 15 cents for double teams and 10 cents for single teams each day they use the market, which is open on Tuesdays, Thursdays, and Saturdays. About 150 farmers patronize this market. Commission men are friendly, and no attempt is made to keep down prices.

NORFOLK, VA.

The market here is owned by the city and operated under rules and regulations provided by city ordinance. The total annual expenses are \$2,611, of which the market master receives \$1,200, the remainder being for repairs, salaries and miscellaneous expenses. The income from rentals amounts to \$17,011. The number of farmers who use this market varies according to the season and the weather. They pay 10 cents per diem for space for a single wagon and 15 cents for a double wagon, hucksters being charged at the rate of 25 cents per diem. Commission men and produce dealers are friendly to the market. Individual dealers in the market receive shipments of fruits and vegetables, which vary according to the season. No attempt is made to keep down prices. This market is not considered a success.

NORRISTOWN, PA.

The borough of Norristown owns the public market of that city, which is operated under rules laid down by the borough. The market is open three days each week: Tuesdays, Thursdays, and Saturdays, the hours of sale being from 3 A. M. to 11 A. M. on every market day, and also from 4 to 9 P. M. every Saturday. The market master receives a salary of \$480 per year. The annual expenses amount to \$840, which includes the salary of the market master and necessary repairs. A rental of \$15 and \$25 is charged for booths, of which there are 156. The market purchases shipments of meats and produce from other communities. It has no trouble with commission men and produce dealers. No record is furnished of the number of farmers using the market. It is not considered as successful as it formerly was, and this is believed to be due to the establishment of stores throughout the borough.

OKLAHOMA CITY, OKLA.

Oklahoma City has received much publicity in the latter months of 1912, owing to its establishment of a city market which consists of stalls along one of the widest streets. This open market was established May 21, and 80 stalls were occupied. By the middle of August the number of stalls in use was 318, these extending along three blocks of the street. The people of Oklahoma City argue that the wonderful

success of the street market indicates the need of a market house wherein products such as meat, fish, butter, eggs, poultry, vegetables, and fruits may be sold. Oklahoma City is to-day experiencing the same feeling that has existed in all of the cities where markets were opened; that is, the importance of direct contact of producer and consumer, and it behooves Oklahoma City to see that the middleman and the huckster do not crowd the producer out of the selling market.

OMAHA, NEB.

At one time the city of Omaha had a public market building, but, as the market was not a success, this building was torn down, and at the present time the market is located on a vacant lot, where stalls have been erected by the city. There are 140 of these stalls, for which a charge of 10 cents per day is made. The market is owned by the city, and is patronized by from 90 to 125 farmers, who sell direct to dealers and peddlers. The market master receives a salary of \$1,200 per year. The annual expenses of the market are \$1,250, which includes the market master's salary and the expenses of printing. Commission men are not opposed to the market, which does not receive shipments from other communities and does not attempt to keep prices down.

OTTAWA, ONT.

A successful public market has existed in Ottawa for 25 years under the ownership and government of the municipality. It has proven a most economic feature in the cost of living and in providing pure food. The market inspector receives a salary of \$1,400 per year. Nine collectors, weighman, etc., receive \$700 per year. A market fee of 10 cents is charged for articles brought to the market place in a vehicle drawn by two horses; upon articles brought by a vehicle drawn by one horse, 5 cents; upon articles brought by hand or in a basket or vessel, 2 cents. A fee of 10 cents is charged for each horse, mare or gelding brought to the market for sale; 5 cents for each head of horned cattle; 2 cents for each sheep, calf, or swine. This fee is collected immediately upon the articles being exposed for sale. Hucksters, grocers, butchers and wholesalers are not permitted to purchase before the hour of 8.30 A. M. any of those articles for family use that are in demand by the consumer.

PHILADELPHIA, PA.

Whether the public market is passing out of Philadelphia or is merely undergoing a transition is a moot question there. In that city the municipally owned markets are known as "sheds," and of the markets which have been operating in recent years but two remain. They are directed by the Department of Public Works, the annual expense being \$1,550 for upkeep and salary of clerk. From \$6 to \$60 per year is the rental charge.

In October, 1912, two of the public markets were transformed into motion picture houses, while others of the privately owned market houses are undergoing repairs now and then which are intended to make the places more sanitary.

An effort is being made by the authorities of Philadelphia to bring the producer and consumer closer together, the first effort being developed in a pamphlet entitled "A Study on Trolley Light Freight Service and Philadelphia Markets." This pamphlet throws some new light on the question of markets, and will illuminate many of the dark corners of this important subject.

The privately owned market houses number 21 and have an assessed valuation of about \$2,000,000. There is quite rapidly developing a demand for the old-style curb market, where the producer might sell direct to the consumer, for such ideal market-

ing does not exist to-day, all bartering being done between the consumer and a middleman.

PITTSBURGH, PA.

The public market in Pittsburgh is owned by the municipality, and its rules and regulations are established by ordinance. The city operates three markets, but the data herein given concern the central one, or what is known as the Diamond Market. The market master receives a salary of \$1,500 per annum, besides which there are expenses to the extent of \$16,100, making a total of \$17,600, which includes salaries and labor, materials and supplies, fixtures and repairs for the buildings. These expenses cover all three markets. The rental charge for the booths is from \$216.50 to \$591.25 per annum, depending on the location. There are 194 booths, besides which 25 farmers have permanent stands for the sale of their own produce. It might be stated here that besides these 25 farmers, between 100 and 200 farmers use the second story of this market on Tuesdays, Thursdays, and Saturdays for the sale of their goods. The space on this floor is set aside exclusively for farmers, and no charge is made. Shipments from other communities are received, these being principally fruit, vegetables, fish and oysters, and every attempt is made by the city to encourage competition and thus hold prices down. Pittsburgh also operates the market on the Monongahela Wharf, at which the farmers sell their produce both at wholesale and retail.

PORTSMOUTH, VA.

The public market of Portsmouth is owned by the city, and is governed by city ordinance and rules laid down by the city council. The market master receives a salary of \$50 per month, and his assistant receives \$30 per month. The additional expenses are estimated at \$350 per annum, and include repairs, changes and incidentals. The market contains 20 booths, and the hucksters' shed contains 24, a total of 44. Rental for booths in the market is graded according to location, the highest price being \$12.50 per quarter. Probably 30 to 50 farmers use the market, selling from market carts and paying 10 cents per day for the privilege. Fruits, vegetables, and poultry are received from other communities. There is not known to be any opposition on the part of commission men and produce dealers. The market, however, is not successful, owing to the fact that most of the housekeepers prefer to buy at the convenient and attractive private markets, tea stores, and green grocers nearer the residence portion of the city.

RALEIGH, N. C.

Though the market in Raleigh is an old one, an investigation leads to the conclusion that the market system has proved satisfactory here, and the city is planning to put up a new building. The present market is owned by the city and has a revenue of \$5,000 per year. The salary of the market master is \$75 per month. The annual expenses of the market are calculated at \$1,300. There is no debt on the building, for it was built in 1870 and the debt was paid off twenty years ago. Rentals charged for the booths in this market vary from \$8 to \$28 per month, and there are at this time 21 booths occupied. Farmers use the market without restriction, placing their wagons outside, for which there is no charge, and they have the right to sell anything they produce. Commission men are found to be entirely friendly to the market, which also receives commodities from other communities, these being principally meats, fish, oysters, game, and vegetables. There is no attempt made to hold prices down.

ST. JOHN, N. B.

The Common Council of St. John issues rules and regulations to govern the public market of that city, it being under municipal ownership. These regulations provide that no person may purchase at the market with intent to resell any article that has not been exposed for sale at least three hours between sunrise and sunset on a market day, thus giving the consumers a chance to make their purchases direct from the producers. The market master receives a salary of \$800 per year. The annual expenses are about \$14,000, and include the market master's salary, repairs, light, heat, insurance, water rates, interest, and sinking fund. There are 43 commission stands and 18 butcher stalls, for all of which a rental is charged. It is a country market only and farmers come from a long distance as well as from the immediate vicinity of the city. Commission men and produce dealers act friendly. Prices are governed by other city prices.

ST. JOSEPH, MO.

The public market of St. Joseph is owned by the city, and regulations are adopted by the City Council. The market master receives a salary of \$780 per annum and the additional expenses make the total \$880. A regular rental is charged for the 20 booths and 200 curb permits, the total fees being about \$3,000 per annum. As shown in the statement concerning curb permits, about 200 farmers use the market. Commission men act friendly to the market, purchasing the surplus after market hours, which are from dawn until 10 A. M. during the months of April to September, and until 11 A. M. from October to March; and the market is open from 4 to 8 P. M. on Saturdays. The market master announces the closing of the market house by ringing a bell ten minutes before closing time.

ST. LOUIS, MO.

In St. Louis there are four markets, owned by the municipality. They are looked upon as successes "in a moderate degree, as they offer a large selection at slightly lower prices than groceries and meat markets." At the Central Market the master receives \$1,000 per year, while the other market masters get \$65 per month. Expenses at Central Market are \$7,000 per year, while the income is \$50,000. Farmers sell at only two of the markets, and commission men are said to be friendly, probably due to the fact that they run the market stalls and booths.

ST. PAUL, MINN.

Because it furnishes a well-patronized central point for the assembling and sale of produce, the public market of St. Paul is considered a success. It is owned and operated by the city, paying a salary of \$1,000 to the market master, and having other expenses of \$4,000, being for the sealer of weights and measures, watchman, janitors, heat, lights, team hire, etc. There are 12 booths and 300 stalls, the rent varying with size and location, the average in 1912 being \$15.80. Many farmers use the market, and the commission men are friendly. Very seldom are shipments brought in, but they consist of apples and potatoes when they are made.

SAN ANTONIO, TEX.

There are in San Antonio both the market house and a "market plaza" where the producer meets and deals with the consumer. The market house is 120 by 225 feet, with 58 booths on the lower floor and a hall with seating capacity of 4,000 on the second floor. In order to build the place the citizens of the neighborhood raised

one-half and the city paid the remainder, the building having been erected about 15 years ago. The booth charge is \$10. The house is self-sustaining, having monthly expenses of \$350. Street vendors have to pay a heavy license, thus forcing the people to the green grocer or the market. In the booths are found 16 butchers, who handle meats killed at home and some foreign meat.

The market plaza is the curb market, where farmers drive into a great square enclosure, at no cost, and offer their goods. To this market go people of every class, on foot, in buggies, and in automobiles. At marketing time in the plaza prices are about 65 per cent. of those asked by green grocers. The market master is, in reality, as in most cities, merely the boss of the janitor. Every attempt is made to make the market place sanitary. Just now there is agitation to place a roof over the great open space known as "market plaza," which lies just to the west of the market house.

SCHENECTADY, N. Y.

A public market, owned by the city, has recently been opened, but as yet no data are obtainable concerning buildings or management. The plans, however, include numerous arc lights, feeding sheds, watering troughs, comfort stations, etc., and an effort will be made to establish a completely up-to-date market.

SEATTLE, WASH.

The public market in Seattle is owned by the city, with large auxiliary adjoining markets owned by private parties. There are about 250 booths in this market, for which a charge is made of 10 cents per diem. During the winter months about 50 farmers use the markets, and this number increases to 250 in mid-summer. The market master receives a salary of \$110 per month. The annual expenses of the market are about \$3,900, being divided as follows: Interest, \$600; market master, \$1,320; janitor, \$720; and inspector, \$1,320. Commission men and produce dealers at first opposed the market, but at present they regard it with apparent indifference. The natural competition engendered by the establishment of the market keeps down prices throughout the city retail stores. Larger stocks and greater variety are supplied by the market, although no commodities are received from other communities.

The Westlake Public Market in Seattle is owned by a private corporation. The annual expense is \$40,000, made up of advertising, free delivery, janitor's services, light, water, refrigeration, etc. No rental is charged for permanent booths inside the market house, but on the curb the charge is 20 cents per diem for each table. There are about 100 booths and the market is patronized by about 100 farmers, who consign their goods to dealers or sell directly to the consumer. Commission men and produce dealers act friendly toward the market, which receives shipments of fruit and vegetables from other communities. Prices are kept down by competition. The market is considered a success because of the large volume of business and the large number of satisfied customers.

SHERBROOKE, QUE.

The public market in Sherbrooke is owned by the municipality and is governed by rules and regulations passed upon by the Municipal Council. It has proven a source of revenue to the city, and a benefit to both the farmers and the consumers. The annual expenses amount to about \$900, including cleaning, printing, and general repairs. The market clerk also acts as City Collector, and \$200 of his salary is charged to the market. The average number of farmers who use the market once a week, on Saturdays, is 125. A small rental is charged for booths. Commission men and produce dealers are friendly. Shipments of farm produce are received from adjoining counties.

No attempt is made to keep down prices. As a protection to the consumer it is provided that no trader, grocer, huckster, butcher, or dealer in provisions shall buy any of the articles required for family use which are brought to the market for sale until after the hour of 10 A. M.

SOUTH BEND, IND.

In South Bend a curb market on one of the wide concrete bridges was established about one year ago. It is open from early morning till noon on three days each week, and is used by an average of 75 farmers and market gardeners, who back their wagons against the sidewalk on the bridge. During inclement weather a building adjacent to the bridge is used as a market house, the merchants of the vicinity contributing the funds to fit this building with stalls, for the use of which no charge is made. No charge for space on the curb is made, and the market is conducted with very few rules or restrictions. The position of market master is filled by the City Sealer. In the beginning a highly organized peddling system, which had grown up through the lack of a market, attempted to handicap the market by buying out the farmers at wholesale prices and selling the stock at higher prices than would otherwise have prevailed. The market adopted rules which, for a time, forced the peddlers entirely from the market, but at present they are allowed at the market, subject to certain conditions. The market is considered a success in the way of opening a larger field for the truck gardeners and reducing prices to the consumer. No commodities are received from other communities, with the exception of fish.

SPOKANE, WASH.

Spokane has two markets, owned by private parties, the stalls of which are sold at auction each year. The streets in front are divided into plots by the city and the market inspector is in charge, renting the street spaces at a small fee—barely sufficient to pay his salary. Reports are that retail merchants oppose the markets. Farmers used the markets at the beginning, but failed to make their wares attractive, and hucksters—both American and Chinese—realizing that the housewife prefers a neat package and clean vegetables, have succeeded in driving the farmer out of the selling market.

SPRINGFIELD, MASS.

The nearest approach to a public market in Springfield is what is termed a "market square," owned by a wholesaler of fruits and produce who has invited the farmers to come there and sell their produce, turning their surplus into his hands. The use of the "square" is free. No idea of the success of the plan can yet be expressed because of its youth.

SYRACUSE, N. Y.

The city owns the public market of Syracuse, which, in 1911, furnished an income of \$7,987. The annual expense is \$300, the market master receiving \$1,000 a year; of the remainder \$2,100 is applied to salaries and \$600 to supplies and repairs. The structure, which goes under the name of the market building, is occupied by small storekeepers, who are not allowed to sell the commodities which are sold by the farmers. The latter station themselves in an open square in front of the market building, where a fee of 25 cents is charged for a double team, 15 cents for a single team, and 5 cents for selling from a basket. A charge of 25 cents is made for weighing a load of hay. The market is not sufficiently extensive to interfere with dealers, and has met with no opposition from them. At the present time there is a sentiment in favor

of establishing a larger market, but it has not yet grown to such proportions as to induce action.

TILLSONBURG, ONT.

There is no public market in Tillsonburg at present. On two or three different occasions a market has been established, but it is believed that the merchants of the city conspired to defeat its success, both by arriving at an early hour and buying all the produce offered and by deliberately under-selling the farmers, who in time became discouraged and ceased to bring their produce to town.

TOLEDO, OHIO

The public market of Toledo is used almost exclusively by wholesale houses which buy in large quantities direct from the gardeners and truck farmers, hucksters and retail dealers also purchasing to some considerable extent. The market master receives a salary of \$720 a year. In 1911 the total expense of the market amounted to \$2,096, which included the market master's salary and the amounts paid to laborers for cleaning. There are about 200 stalls in the market, erected at a cost of about \$120,000, these stalls being auctioned off at the beginning of the season. A charge of 25 cents per diem is made for every wagon standing outside the private stalls. This market is considered a success, having in 1911 paid the city a profit of several thousand dollars. Plans are now being formed to establish retail markets in Toledo, with the object of obtaining lower prices.

TORONTO, ONT.

The city of Toronto owns the public market, which is governed by rules and regulations passed upon by the Municipal Council. The annual expenses are approximately \$10,000, consisting chiefly of salaries. The market is in charge of a foreman, who receives a salary of \$17 per week. No rental is charged to farmers for the use of the market. About 125 farmers display their goods for sale on Saturday, which is the main market day. Commission men and produce dealers are neutral. The market receives shipments from other communities, and prices are regulated according to demand.

TRAVERSE CITY, MICH.

The public market of Traverse City, Mich., consists of a scale house and a maple tree. The buyers, who are commission men, sit beneath the tree and bargain for the farm products as they are brought to be weighed. There is a master, who receives \$50 a month, while light, caretaker's salary, fuel and telephone run the expense to \$1,035 per year. No licenses or rentals are charged.

WASHINGTON, PA.

Thirty years ago the operation of a public market in Washington was abandoned. During the summer of 1912 an experimental curb market has been operated under the management of the Board of Trade, with the idea of learning if a permanent market is needed. This experiment has been most satisfactorily concluded. The market was so well patronized that real estate men of the city have now leased a large building to be used for this purpose. All the stalls in this new market have been rented for the year at a charge of \$5 each. Up to the time of compiling this article no rules and regulations have been issued, and no market master appointed. The farmers in the vicinity seem highly pleased with the facilities furnished them to assist in the disposition of their produce, and the establishment of the market has been accorded public approval; in fact, it is decidedly popular.

WATERTOWN, N. Y.

A public curb market, on a lot rented by the city, was opened late in the season of 1912. There is no market master as yet and no expense, the rent being merely a nominal sum. Only a few farmers have used the market for displaying their produce, but it is believed that in the spring of 1913 their number will be largely increased and the success of the market assured. This market receives no outside shipments and is favored by the commission men. Prices are lower than those of the retailers, owing to the elimination of the middleman.

*
WHEELING, W. VA.

A new market house and auditorium combined is being erected in Wheeling and is almost completed. Details as to management, expenses, etc., are not yet obtainable. The old market, in the same location, was for many years a source of small revenue to the city, which owns the ground on which the market stands, the grant from the original owners providing that the land shall be used for no other purpose. The new market is to be operated by a stock company formed under the Board of Trade, which holds the franchise, and in conjunction with the city of Wheeling.

WICHITA, KAN.

Under the commission form of government Wichita operates a successful public market, which is under the jurisdiction of the Commissioner in charge of public parks, playgrounds and health. The market place is adjacent to the large gathering place known as the Forum, and is 150 by 300 feet in dimensions, paved and temporarily roofed, with a frontage of permanent buildings, devoted to offices, restaurants, fruit stalls, etc. The entire space will be permanently enclosed within a short time. It is the intention of the municipality to acquire the entire block in which the Forum and the market place are located, and to use it for additional civic purposes of exposition and fairs of various kinds. The market master receives a salary of \$75 per month. The other expenses of the market are \$4 per month for light, \$8 per month for water, and \$12 per month for garbage removal. There are ten booths, for which a rental of \$5 is charged; 250 farmers use the market, which also receives shipments of vegetables and fruit from other communities. The commission men and produce dealers are opposed. Prices are kept down by considering the standpoint of the consumer. This market has been a paying proposition from the beginning.

ZANESVILLE, OHIO

The market of Zanesville is considered a money maker for the town, and plans are being worked out for a new market place. The present one is owned by the city and its rules and regulations are made by city ordinance. Permission is given to truck gardeners to sell direct without peddling, and the rent of the booths or stall gives the city a substantial revenue. The market master receives a salary of \$720, and the total expenses, including this salary, are estimated at \$1,075, the expense beyond the market master's salary being janitor's service, light, heat, and incidentals. The rental charged for booths is \$4.50 per quarter, and there are at the present time 70 booths occupied. Sixty of these booths are used by farmers, who sell their produce direct to the consumer. Commission men are friendly to the market, which does not receive shipments from other communities, but sells only what is locally produced. General market prices govern, and there is no attempt to hold down prices.

VI. FOREIGN MARKETS

By Mrs. Elmer Black

THE BRITISH ISLES

London has features that render it comparable in a peculiar degree with New York. The population of both, including their outer ring of suburbs, is over five millions. In each case there is access to the open sea by means of a waterway over which passes the commerce of the seven seas. Railroads supplement the water-borne cargoes with home-grown produce.

London's markets do not afford the unbroken example of municipal control that they would if a new system were to be created at the present day. Precedent looms large in British administration and even now there are only two ways of establishing a market—by Parliamentary authority and Royal Charter. King Henry III covenanted by charter with the City of London not to grant permission to anyone else to set up a market within a radius of seven miles of the Guildhall, and this privilege was subsequently confirmed by a charter granted by Edward III in 1326. But of late years the City Corporation has waived its rights and allowed markets to be established in various districts wherever a real necessity has been shown to exist. In fact, the markets of London have grown with the city, keeping pace with its requirements.

There remains, however, the fact that certain Corporation markets and Covent Garden market serve as great wholesale terminals, connected more or less unofficially with the numerous local markets in the outlying districts.

Chief among the Corporation markets is Smithfield, covering about eight acres, and costing altogether \$1,940,000. There are to be found wholesale meat, poultry, and provision markets, with sections for the sale, wholesale and retail, of vegetables and fish. In the last twenty years the development of cold storage processes has lowered the quantity of home-killed meat and remarkably increased the importation of refrigerated supplies. Last year the wholesale market disposed of 433,723 tons of meat, of which 77.2 per cent. came from overseas.

Ten years ago the United States supplied 41 per cent. of the Smithfield meat, but now these supplies have fallen off enormously and the last report of the Markets Committee says: "The United States, in particular for domestic needs, is within measurable distance of becoming a competitor with England for the output of South America." South America and Australasia are, indeed, the chief producers to-day for the British market.

This has developed a great cold storage business in London. All told, London can accommodate 3,032,000 carcasses of mutton, reckoning each carcass at 36 pounds. Over 41 per cent. of England's imported meat passes through Smithfield, and railroad access is arranged to the heart of the market. The Great Northern Railway Company has a lease from the corporation on 100,000 feet of basement works under the meat market, with hydraulic lifts to the level of the market hall, and inclined roadways for vehicular traffic.

Most of the tenants at Smithfield are commission salesmen, who pay weekly rents for their shops and stalls at space rates, all the fittings being supplied. Last year these rents brought in \$427,920. There is a toll of a farthing on every 21 pounds of

meat sold, which, together with cold storage, weighing, and other charges, amounted in the same period to \$241,635. The meat sales are entirely wholesale, except on Saturday afternoons, when there is a retail "People's Market," where thousands of the very poor buy cheap joints.

The inspection is very strict, every precaution is taken to ensure cleanliness, and breaches of the regulations are punished by fines or imprisonment. All condemned carcasses are sent to a patent Podewill destructor to be reduced by steam pressure and rolling to a powder, which is disposed of as an agricultural fertilizer.

On these central meat markets there is a *profit of about \$100,000.*

The Corporation also controls a great live cattle market at Islington, covering seventy-five acres. Over \$2,500,000 have been spent on this market and the modern slaughterhouses attached thereto. These slaughterhouses are not regarded as a remunerative concern, but are provided because they afford hygienic methods, and private slaughterhouses in London are decreasing rapidly. Last year 37,670 cattle, 101,646 sheep, 11,722 calves, and 34,981 swine were slaughtered there, the charges being 36 cents a head for cattle, 4 cents for sheep, 8 cents for calves, and 12 cents for hogs. Mainly on account of the extensions and improvements, this market is not being run at a profit at present, but its public utility is held to justify the outlay. Nor does the Deptford cattle market, of thirty acres, maintained on the banks of the Thames to deal with live cattle imported from abroad, pay its way. But there has been a serious decline in imported stock in late years, especially from America. At this market extreme precautions are taken to prevent the entry of cattle disease that might spread infection to British flocks and herds. All animals landed there must be slaughtered within ten days and submitted to rigid inspection. All hides and offal are immediately disinfected. Five hundred cattle can be unloaded from vessels at Deptford in twenty minutes. Last year 104,351 animals were killed, the meat being sent for sale to Smithfield and Whitechapel.

Billingsgate, the famous fish market of London, is also administered by the Corporation. Its records cover over six hundred years. It is hampered by narrow street approaches, but a very expeditious system of direct delivery of fish from the Thames side of the market building enables the licensed auctioneers to dispose of supplies very quickly. Steam carriers collect the fish from the fleets around the coast and deliver them packed in ice at Billingsgate every night. Billingsgate market has cost the city \$1,600,000. Stand prices are high, but there is keen competition whenever a vacancy occurs. Last year the receipts amounted to \$182,455. The auctioneers dealt with 194,477 tons of fish, of which 120,905 were water-borne and 73,572 land-borne. *The City profited to the extent of over \$40,000 on this fish trade.*

On the wholesale and retail meat, fruit, vegetable, and fish market at Leadenhall there is also a profit of over \$5,000.

On the entire municipal market enterprises of the city there is a profit of \$156,000. The markets are regarded with especial interest by the Corporation, and the Committee which regulates them is considered one of the most important in the whole administration of the city. In order to keep abreast of the times most of the profit is expended on improvements and extensions.

Covent Garden, London's great fruit, flower, and vegetable market, is owned by the Duke of Bedford, whose family have held it for hundreds of years. In the past century they have spent \$730,000 on extensions and improvements. Of the present modern buildings, the fruit hall cost \$170,000 and the flower building \$243,000. Formerly the producers were chiefly concerned in the market, holding their stands at a yearly rental. But with the expansion of London the growers have gradually given place to dealers and commission men, who pay twenty-five cents a day per square foot of space, and on the produce, at a regular scale, according to its nature. On flowers there is no toll, but each stand holder pays a fixed rental. Though this

market has direct access neither to river nor railroad, it still retains its premier position among the wholesale markets of England. As the approaches are extremely narrow, most of the produce has to be carried on the heads of hundreds of porters from the wagons outside into the market buildings. As it is under private ownership, no figures are issued, but there is known to be a huge profit on the market. For outer London there are fruit and vegetable markets at Stratford in the east, Kew in the west, the Borough in the south, and two railroad markets in the north.

Birmingham, England's chief midland city, has owned its markets since 1824, administering them through a markets and fairs committee. Since 1908 the profits have been somewhat reduced, owing to outlay on improvements and extensions; but, although the city has expended \$2,156,362 on the markets, the profits have paid off more than half of that indebtedness, besides relieving taxation in other directions.

Not far away is the small city of Kidderminster, that may be mentioned as affording a demonstration of provincial municipal enterprise, under more restricted conditions. On its vegetable market it makes a *profit of \$1,000*, and on its butter market a *profit of \$1,500*. The population of the city is only 25,000. Another midland city, Wolverhampton, makes a *profit of nearly \$20,000*.

Liverpool, the great northern port on the Mersey, has spent \$1,242,534 on six municipal markets. The only market to lose money is the cattle market, which shows a deficit of \$8,000. Liverpool has a cold storage capacity for 2,176,000 carcasses. On the whole municipal market enterprise, in this city of 700,000 people, there is an average annual *profit of \$80,000*.

Manchester serves not only its own area but surrounding industrial centers, with a total population of nearly 8,000,000. There are twelve markets and four slaughterhouses. Since 1868 the city has benefited by their administration to the extent of *\$3,250,000 profit*.

Next to that of London, the fish market here is the largest in England. Its annual profit is well over \$10,000, in addition to heavy extension payments in late years.

Dublin, the capital of what is often called "the distressful isle," makes a *profit of \$14,000* on the food market and *\$12,000 more* on the cattle market, while Edinburgh, Scotland's chief city, makes about *\$15,000 a year on municipal markets*.

Statistics are available of something like 150 other British towns and cities, ranging from a population of 5,000 upwards, where there is the conviction born of experience that municipal markets pay not merely in profits, but in convenience to the community, and they have a powerful influence in keeping prices down.

GERMANY

Perhaps more than any other country in the world Germany places reliance on municipal markets, because of the peculiar pressure of the problem of the high cost of living in the cities there. On several occasions, during the last twelve months, the butchers' stalls have been raided by women in protest against the 10 per cent. increase in one year on the price of meat. And when, to meet the clamor, the government reduced the hitherto prohibitive import duties on meat by one-half and the inland railroad charges by one-third, it was on condition that the meat brought in should be for delivery to municipal markets or coöperative societies only. The result has been an immediate fall in retail prices ranging up to 50 per cent.

Berlin's two million people since 1886 have had a splendid terminal market on the Alexanderplatz, consisting of two great adjoining halls, with direct access to the city railroad. One of these halls is entirely wholesale, while the other is partly wholesale and partly retail. Meat, fish, fruit, and vegetables are dealt with under the same roof by upwards of 2,000 producers and dealers.

The whole market cost \$7,250,000, of which \$1,920,711 was for the main market

and \$4,852,862 was for the slaughterhouses, which are most elaborately equipped to ensure sanitation and cleanliness. Great as the market is, the pressure of business has grown so much that a project is on foot to construct more accommodation at a cost of \$15,000,000. The market is maintained by stand rentals and administrative charges and by a fund established for the improvement and extension of the system. On the entire enterprise, when all charges have been met and interest paid, there is a *profit of over \$135,000 a year.*

A committee of eleven, partly city councillors and partly selected representatives of the public, administer the markets, with ninety-three officials to ensure the carrying out of their orders. The regulations are most elaborate, especially as regards the inspection of foods, which is conducted by a department having a staff of six hundred.

A healthy competition is created by the system of sales, which may be conducted by the producer himself, or through an approved wholesale dealer, or through one of the six municipal sales commissioners. These municipal sales commissioners have to give bonds on appointment and are not allowed to have any interest in the trade of the market beyond a small percentage on sales. Producers living at a distance can have their business carried through by them under conditions so well understood and respected as to ensure confidence. Though the municipal sales commissioners handle less than a quarter of the sales, they nevertheless act as a check on the private dealers, especially as they issue a regular report on the average wholesale prices. Moreover, the purchasers benefit by these market arrangements, for if they buy from a regularly authorized dealer they can file a claim with the administration if the supplies delivered are faulty and if their case is proved the account will be rectified.

About fifty railroad car loads can be handled at once at the market, but when extended accommodation is provided it is intended to deal with two hundred carloads simultaneously. On supplies thus delivered a railroad tax is collected from the receivers for maintaining rail connections, and this yields an annual profit of \$11,000.

Of the stand holders, nine-tenths are monthly tenants, and the remainder pay by the day. The highest charge is 9.5 cents per square meter a day for meat stalls. The fish sold comes mainly from Geestemunde, at the mouth of the Weser, and is sold under the strictest conditions, only a small commission being allowed to be added by the dealers.

The slaughterhouses deal with 800 wagons daily and for the use of the butchers and the market generally 2,000 cubic meters of distilled water are produced every day, valued at four cents the square meter. Eight thousand pipes conduct the water to every part of the market. To ensure cleanliness, bathrooms and rooms for drying clothes are established for the use of the butchers, who are charged two and a half cents a bath. In inspecting the carcasses the veterinaries take the most minute precautions. From every animal four samples are taken, at different parts of the body, and each of these samples is submitted to tests for twenty minutes.

In an average year 14,000 carcasses are condemned and destroyed, as well as 400,000 diseased parts. Whenever possible the inspectors cut away diseased portions, and the remainder of the carcass, after being sterilized, is sent to the markets known as the Freibank, for sale to the very poor. This proportion is not so startling when it is considered that something like two million animals are slaughtered every year, of which more than half are pigs. Until recently Germany used to export a large number of prime animals to the London market, but the demands of home consumers now prevent this and the export trade has practically ceased. In fact Germany, in common with the rest of Europe, is now competing for the world's refrigerated supplies.

Storm doors and windbreaks are provided at the entrances to the markets and wagons are only allowed inside at certain hours and through specified doorways. Thus there is an absence of dust, and a carefully arranged series of windows ensure ample ventilation. All dealers have to unpack their stock at least once every seven

days, for the destruction of unsound articles. All supplies of unripe fruit, horseflesh, and artificial butter have to carry labels disclosing their real nature. Attached to the market is a hospital with skilled attendance, for cases of sickness or injury happening on the market premises.

As in most other centers, the establishment of the market led to the peddlers entering into outside competition. They bought their supplies wholesale inside, and then offered them cheaply outside, free from stand rentals and other charges. This menace to the prosperity of the market grew so great that the peddlers' traffic in adjacent streets was prohibited and strictly limited elsewhere. This measure, in fact, is deemed essential in every city where municipal markets are conducted successfully.

Cologne completed a million dollar market in 1904, with a cold storage plant and connections with the state and narrow gauge railways. Nearly half the space is taken up by wholesale dealers in fruit and vegetables.

The chief fault of the market is the remoteness from the center of the town. At first it had a great success but, on this account, it has not been entirely maintained. Encouraged by that initial prosperity, the city authorities bought a nearer site, but the subsequent decrease in the market's popularity has caused the postponement of extensions. Though the market does not pay the 5 per cent. on capital that is required, the present administration, even with its drawbacks, does succeed in making a profit of about 3 per cent. on the capital invested, last year's income amounting to \$535,200.

Hamburg is peculiarly situated as to its market conditions. The market halls of Hamburg and Altona adjoin, but while the former is under the control of the Hamburg senate, the latter is subject to the laws of the Prussian government and administered by the Altona city authorities. Each has a large hall, with a considerable portion of the space used for auctions. The senate of Hamburg appoints two auctioneers and Altona one; but, while the latter is a salaried official, the former are two Hamburg auctioneers approved by the government for the special market business, on undertaking not to trade on their own account. The trade of the chief market is in fish. With the Altona market, the Hamburg market and the Geestemunde market, the sales in this section of Germany are the most important in the Fatherland for fresh sea fish and salted herrings. About a fourth comes in fishing cutters or steam trawlers direct alongside the market halls, while the remaining three-fourths come from Denmark by rail or by ships from England, Scotland, and Norway. Often there are three or four special fish trains from the north in a day, while twenty-five to thirty steamers bring the regular supply of imported fish.

The auctioneers derive their revenue from a 4 per cent. charge on sales of the cargoes of German fishing vessels and 5 per cent. on imported supplies. Out of this they pay half of 1 per cent. to the government on the German and 1 per cent. on the foreign sales. No fees are charged to importers and dealers using the auction section of the fish market. Out of the percentage paid to the government by the auctioneers is provided light and water, the cleansing of the halls, and the carting away of refuse for destruction. Strict regulations govern the inspection of the fish and to ensure the destruction of those that have deteriorated they are sprinkled with petroleum immediately on detection.

Steam fishing boats using the market quays pay 48 cents for 24 hours' use, sea-going sailing cutters 24 cents, river sailing cutters 6 cents, and small boats 3 cents, in which charges the use of electric and other hoists is included.

From these markets almost the whole of Germany receives its sea fish supplies, for the distribution of which most of the leading dealers have branch houses in the principal cities.

There are also two markets—one in Hamburg and one in Altona—for the sale of farm produce, mostly transported thither by boats. Besides these, there is a big

auktion for imported fruit, conducted by private firms. All these Hamburg markets are prosperous, and their utility to the community is universally acknowledged.

Frankfort's market system dates back to 1879, when the first hall was erected at a cost of \$375,000. It has 548 stands on the main floor renting at \$1.08 per two square meters a month, payable in advance, while there is space for 347 more in the galleries at 84 cents per two square meters a month. Nearby is a second hall, built in 1883 at a cost of \$143,750. A third hall followed in 1899 at a cost of \$38,500, while in 1911 further extensions were determined on and there are fresh projects now under consideration. Besides these covered markets the city has a paved and fenced square that has been used since 1907 as an open market, where stands are rented at 5 cents a day.

Sixty per cent. of the stands in the market halls are rented by the month and 40 per cent. by the day. Tuesdays and Fridays are reserved for wholesale trading. A market commission rules the markets and the police enforce their regulations, the violation of which is liable to cost the offender \$7.20 in fines or imprisonment up to eight days.

Munich, with a population of half a million, has the most modern of all the European municipal markets. It was opened in February, 1912, and embodies the improvements suggested by experience of market administration in other cities.

The total cost was \$797,000, of which \$510,000 was spent on four communicating iron market halls, with their cellar accommodation underneath, \$190,000 on a receiving and toll department, \$52,000 on a group of adjacent buildings, including a post-office, restaurant, and beer-garden, and \$45,000 on roadways. The whole establishment covers 46,500 square meters, of which the market halls occupy 37,100 square meters.

At the northern extremity of the buildings is the toll and receiving department, where produce is delivered at special sidings connected with the south railway station of the city. Next comes a succession of lofty halls, with covered connections, terminating in a small retail section and the administration offices. At the northern end of the great market is a section where express delivery traffic is dealt with, while the western side is occupied with sidings for loading produce sold to buyers from other German centers.

Below the toll house and the market generally are vast cold storage cellars and refrigerating plants for the preservation of surplus supplies till the demand in the market above calls for their delivery. Each market hall is devoted to a separate section of produce, and the cellars below are correspondingly distinct, so that there is an absence of confusion, orderliness is ensured, and rapid deliveries facilitated. Across this underground space from north to south run three roadways, while down the center, from east to west, a further broad aisle is provided, with an equipment of great hydraulic lifts. There are nine of these lifts altogether for heavy consignments, while each stand owner in the market has, in addition, a small lift connecting his stand and storage cellar.

Both market halls and underground cellars are so constructed as to facilitate ventilation and complete cleanliness. The floors are of concrete and every stand is fitted with running water, with which all the fittings have to be scoured every day. There is both roof and side light, and ample ventilation, while the entrances are wind-screened, to prevent dust. Electric light is used underground, and the cellars are inspected as strictly as the upper halls, to ensure due attention to hygiene. In the center of each market hall there are offices and writing rooms for those using the markets. In the restaurant 150 can be served with meals at one time, or they can be accommodated with seats in the beer-garden.

Associated with this market establishment is a great cattle market and range of slaughterhouses on a neighboring site. The live cattle market dates back for cen-

turies, but the present accommodation was only completed in May, 1904, at a total cost of \$1,600,000.

Last year 809,508 animals were sold, including 432,159 swine and 234,457 calves. In the slaughterhouses 713,228 of these were killed, besides 2,619 horses and 97 dogs. About 25 per cent. of the animals reach the market by road from neighboring farms, while 75 per cent. come by rail. For the inspection of all flesh foods there are very strict rules, enforced by the chief veterinary surgeon, Dr. Müller, and a staff of specially trained assistants. As in Berlin, extensive bathrooms are provided for the slaughterhouse staff, and baths are available at nominal charges. Though the new market halls have not been established long enough to provide a definite financial statement, the live-cattle market and slaughterhouses do afford an indication of the success of municipal administration in Munich. Last year the income was \$416,500 and the expenditure \$410,100, thus showing a profit of \$6,400. The new produce halls are certainly the best equipped in the world, and the only element of doubt as to their success arises from the fact that three old-fashioned open markets are nearer the center of the city and for that reason are even now preferred by many retailers. This fact emphasizes the importance of selecting a central position in establishing a municipal terminal market.

FRANCE

Paris has one of the most skilfully organized municipal market systems in Europe. The chief food distribution center for the 3,000,000 Parisians is established at the Halles Centrales, a series of ten pavilions covering twenty-two acres of ground and intervening streets. Altogether this great terminal market has cost the city more than \$10,000,000.

Most of the pavilions are entirely for the wholesale trade, but some are used as retail markets to a limited extent. Retail traders are being decreased gradually, so that whereas in 1904 there were 1,164 retail stands there are now only 856.

The total receipts of the Halles Centrales and thirty local markets amount to \$2,100,000, of which *about \$1,000,000 is profit*. There is a general advance in the wholesale trade, but the local covered markets or marchés de quartier, are not progressing in the same way, so the city does not quite maintain a steady level of market profit.

The reasons given for the falling off of the retail trade are various, but the principal causes appear to be (1) the growth of big stores, with local branches, that deliver the goods at the door, thus relieving the purchaser of the necessity of taking home market supplies; (2) the number of perambulating produce salesmen, who sell from carts in the street at low rates, having neither store rent nor market tolls to pay, and (3) the growth of coöperative societies.

A complicated and severe code of regulations governs the markets. Commission salesmen at the Halles Centrales must be French citizens of unblemished record and must give a bond of not less than \$1,000 in proof of solvency. Producers may have their supplies sold either at auction or by private treaty, as they prefer, and as the agents are not allowed to do business for themselves the distant growers have confidence in the market methods.

In the retail markets each dealer in fresh meat pays just under \$6.00 a week in all, while dealers in salted meats, fish, game, and vegetables pay a much lower rate. All, however, in the covered markets pay three taxes—one for the right to occupy a stand, one for the cleaning and arranging of the markets, and one for the maintenance of guardians and officials. In the open markets the stands are rented by the day, week, or year, the rate for the day ranging from ten to thirty cents, according to space. Several of these local markets have charters, dating back to pre-revolution days, that cannot now be annulled.

It would be difficult to devise a more thorough system of inspection. An average year's seizures include half a million pounds of meat, 17,000 pounds of fruit and vegetables and half a million pounds of salt water fish.

Thus the Paris market arrangements provide an admirable central clearing house, where supplies are inspected and sold under such conditions as to prevent the artificial raising of prices. It also acts as a feeder to the *marchés de quartier*, to the great convenience of local consumers. Moreover, the producer is safeguarded, for on his supplies a small fixed percentage only can be charged by the salesman, and the current market prices are made public by agents especially detailed for that purpose.

Havre, the well-known French seaport, with a population of 130,000, has a profit of over 6 per cent. on the Halles Centrales and 10 per cent. on the fish market. All told there is a *profit of \$27,000* on the twelve municipal markets.

The Halles Centrales occupy an entire square in the center of the city and cost \$75,000, exclusive of the site. Gardeners and farmers are not permitted to sell their produce on the way to the market and are only allowed to deliver to storekeepers after the wholesale markets are closed. Here, as elsewhere where the markets are successful, every precaution is taken to avoid the prosperity of the market being dissipated by sales in the surrounding neighborhood. The annual rents for butchers are very moderate, ranging from \$57.90 to \$154.40, vegetable dealers \$42.85 to \$92.64, dairy produce dealers \$52.11 to \$85.11, fish-mongers \$23.16 to \$86.85. In the wholesale markets there is an annual trade turnover worth well above \$1,000,000, of which fish represents \$280,000. So far from the fishermen finding the fish market detrimental to their interests, they welcome it and cheerfully observe the rule forbidding sales on the quays or transit sheds except under special permits.

Lyons, with a population of half a million, may be taken as the best example of a flourishing French provincial city at a considerable distance from the sea. The principal market, La Halle, is known all over France for its public auctions. Accommodation is provided for 276 stalls, rented at 14 cents a day per square meter for fruit, vegetables, and cheese, while other stalls for meat and fish are rented at 33 cents per square meter.

At the morning auctions, held at the rear of the hall, are sold immense quantities of fish, oysters, lobsters, game, poultry, butter, cheese, eggs, fruit, and vegetables. There is a rule that all supplies must come from outside Lyons, so that local store men cannot there dispose of surplus stocks, but dealers in other French cities often thus relieve themselves when overloaded. These auctions not only enable local dealers to distribute supplies at cheap rates to the small stores all over the city, but wide awake housewives can frequently tell just what the stores gave at wholesale for the produce offered to them at retail later in the day, so a check can be kept on overcharges.

The auctioneers are given a monopoly of selling for ten years, on binding themselves to pay to the city a sum equal to 2 per cent. on the total annual sales. The minimum is fixed at \$1,930 for one stand or \$5,650 for four stands, to be paid to the municipal treasury. Two per cent. is added to the purchase price of every payment made by buyers at auction, and if this does not amount to \$1,930 per stand for the year, the auctioneer has to make up the difference. The poorer classes benefit largely by these sales, banding together to buy wholesale and then dividing their purchases.

There are also seventeen markets for general retail trade in Lyons. The Terminal Market of La Halle cost the city \$886,980. The company which built it was given a concession for fifty years, on a division of profits arrangement, but within sixteen months the utility of the market as an advantageous enterprise for the city was so clearly demonstrated that the municipality bought the company out.

AUSTRIA-HUNGARY

Vienna, with 1,700,000 people to supply, has a magnificently managed system of forty-five markets, seven of which are located in large, well-ventilated halls, all kept spotlessly clean.

Market commissioners appointed by the municipality conduct the business of the markets according to strict regulations, enforcing a rigid inspection of all products as well as weights and measures. Violations of these rules are punishable by fines of about \$2.00, imprisonment for 24 hours, or exclusion from the markets. Such penalties are enforced when buyers are defrauded, dealers oppose the market authority, or exceed the charges that are posted in the market.

Not merely land and water produce, but general farm and household requisites, are sold at these markets. Outside buying is strictly controlled, owners of boats on the Danube or wagons on the public streets paying toll to the municipality on any sales.

Over \$60,000 profit is the average annual yield of the markets to the city treasury, and it is generally agreed that the market system tends to keep down the price of foodstuffs to normal levels.

Buda-Pesth has 715,000 people and a very complete market system, under which, though only nominal rentals are charged, there is a *profit of over \$100,000*.

There is one large wholesale terminal market, while six local markets cater for the retail requirements of all quarters of the city. All salesmen are carefully selected; criminals and diseased persons being rigidly excluded. Though a wide variety of articles are sold in the smaller markets besides farm produce, storekeepers are not allowed to rent stalls, so the market men and farmers alone have the use of the buildings. The regulations under which they trade were drawn up by a market commission and confirmed by ministerial decrees. These regulations are regarded in Europe as a model of comprehensiveness and their observance ensures close attention to hygiene. Among the rules is one insisting on the placing of all waste paper in the public refuse receptacles, while another compels the use of new, clean paper only in wrapping up food products.

Stalls are rented from four to ten cents a day, according to the accommodation. Supplies come by boat, rail, and wagon, and when there is pressure on the interior market space sales are allowed from the boats and wagons at a toll of ten cents a day. Otherwise only merchandise is allowed to be sold outside the market halls. Not only must no fish, game, meat, or poultry be sold without first being passed by the veterinary inspectors, but none of these articles of diet must be brought to market packed in straw, cloth, or paper. Unripe fruit must not be sold to children.

Every day a bulletin issued by the market commission sets out the wholesale prices, while a weekly list gives the retail prices, but in the latter case the note is added that the market commission will not be responsible for any controversy that may arise. All the stocks held by the market traders are insured by the municipality, though not to their full value.

Not only have these markets proved beneficial to the consumers generally, but the market men are unanimous as to their advantage, for they afford a ready and inexpensive means of doing a large business.

HOLLAND

Amsterdam, with a population of 510,000, has, all the local markets under the control of the municipality. They are divided into five districts, each managed by a director or market master, responsible to the city council.

Two of the markets are covered, but the remainder are open and are situated by the side of the canals, along which the produce is brought in boats from the farms

around. On the administration of the markets in an average year there is a *profit of \$36,000*, but there is a law against making a profit on municipal enterprises, so the surplus is spent on local improvements.

Rotterdam, another great Dutch seaport, operates its markets under similar conditions and makes a *profit of \$34,000*, of which \$23,000 comes from the cattle and meat markets.

BELGIUM

Brussels, possessing a population of half a million, reaps considerable advantage from its picturesque municipal markets, four of which are covered, while several are in the open air.

The renting of space to stand holders at the central market is according to the highest bidder, provided the price is not below \$11.58 per month for meat, \$9.65 for poultry and game, \$5.79 for fruit, vegetables, butter, and cheese.

Both producers and dealers sell at these markets, all their supplies being subjected to drastic inspection regulations. All meats are tested by the municipal veterinary surgeon and his staff, while a communal chemist regulates the milk, butter, and general dairy produce. The cleansing of the markets is done by the department of public cleanliness. Some of the public markets are managed by a contractor, who receives \$250.90 a year for setting up the stalls and keeping them in good order. He deposits a security on undertaking his contract and in default of a satisfactory performance of his work the commune does it and charges him with it.

VII. PROVISIONING METROPOLITAN POPULATIONS WITH FRESH FOODSTUFFS

Including

A History of the Market System of Berlin

By Edgar Lange

Abridged Translation of Chapters V, VI, VII, VIII, and IX,

By Jacob M. Friedland, Office of the President of the Borough of The Bronx

ORGANIZED METROPOLITAN PROVISIONING SYSTEMS, PARIS

The oldest metropolitan provisioning system is represented by the Central Halls of Paris. Philip Augustus and Louis XII sought to solve this problem on a scale in keeping with the importance of the city, and during their reigns were taken the first steps to put the markets under sheltering Halls. The Halls have become famous in history because they were used for political assemblies in the time of the great Revolution; this circumstance has contributed largely toward giving the market hall system a place in the affections of the inhabitants of Paris. The construction of the existing Central Halls was begun in the year 1811 under the influence of the foresighted and statesmanlike genius of Napoleon I; and, laid out on broad lines, they were first completed in 1856 under Napoleon III.

This establishment has become the center of the Paris wholesale trade in market stuffs, and the retail dealer who supplies the consumers obtains his supply almost exclusively through it. Through the gathering together of the wholesale trade in the Halls, the centralization of the entire supply for Paris has been accomplished. This was facilitated by the removal of an exceedingly burdensome consumers' tax, which was first completely accomplished with the introduction of the market fees in the Halls.

The great fault in the Paris establishments consists in the fact that they have no immediate railroad connections, and consequently the supply from the railroad freight yards must be brought by express wagons. When the markets were founded, which was before the time of the railroads, attention was paid only to their central location, and as a consequence neither was a railroad connection straight through Paris ever made, because of what were considered insuperable difficulties, nor was the construction of an underground railroad connection for market-stuff traffic, proposed by Napoleon III, ever carried out.

While allowing the greatest freedom in the development of the Paris wholesale trade, which has as a result become almost too highly specialized, the system is complicated by a large number of regulations which are meant to provide for all possible and probable happenings in the market. For this purpose heavy and expensive official machinery is employed.

The provisioning of Paris is made difficult by this indirect method of supply and is burdened with heavy fees, which are the higher because the city, with its large

debt, regards the market trade as a sure and favorable source of income. The prices of fresh foodstuffs in Paris are consequently very high.

The wholesale market in the Central Halls of Paris has had an exceptionally good development in spite of its technical, administrative, and fiscal complexity corresponding to the French economic system. The Halls, which have become too small, and in some respects are now antiquated, are constantly overcrowded so that a lively trade extends out into the streets. Large profits are enjoyed by the wholesale dealers, as well as by the official sales agents, who are appointed in the interest of producers who cannot personally come to the market.

The prices obtained in the Central Halls for market stuffs determine prices for the whole city, and Paris has become a center of distribution for all of France. Even the producers of the distant provinces prefer to work for Paris, because they find there a surer and more profitable sale than in the smaller and less dependable markets of the provincial towns—and this, in spite of the high freight rates and the other high fees. These producers even buy their more costly goods through Paris.

At present there are always sufficient quantities of fresh foodstuffs in good condition available, even in years of unfavorable harvests. What the Central Halls are capable of doing for the provisioning of the population has been shown in the war year 1870 when, through its organization alone, the metropolis was able to provide itself in two months against a siege lasting half a year.

The retail distribution of fresh foodstuffs takes place in single stores or in retail markets, not all of which are located in the Halls, in which the business is carried on either by the city itself or by private individuals. The stores and the open square markets in the suburbs, which are independent of the central market, are in a flourishing condition, and are preferred by the Parisians, but the retail markets in Paris have little significance.

LONDON

The second oldest metropolitan provisioning system centralized in market halls exists in the City of London. There exists, however, no common central market for all the fresh foodstuffs, as in Paris, but the principal classes of the market traffic are separated from one another; thus, meat and all the other animal products are sold chiefly in Smithfield, vegetables in Covent Gardens—a privately owned market—and sea food in Billingsgate on the Thames.

All wholesale markets are provided with railroad connections; but since these are nowhere adequate, and supplies are burdened with high freight rates besides, considerable trucking is made necessary; this is expensive, and is difficult because of the rehandling it entails.

The wholesale trade is carried out with entire freedom and independence under the guidance of the market dealers. There are almost no official sales agents. The administrative machinery is light and only a few rules, like expulsion from the market stand for disorderly conduct, suffice for the smooth carrying on of the gigantic market trade, whose sole fees consist of very high stand rents. * * * * *

The provisioning with fresh foodstuffs is done in London almost entirely through the wholesale markets, which are always overcrowded in spite of their magnitude. There exist only a few independent wholesale firms, who are interested mainly in the importation of tropical foods. In addition, the railroad companies and the shipping companies have established depots in their freight yards and on their docks, where they carry on an increasing wholesale traffic in market stuffs as a side line—taking advantage of their immediate contact with receivers.

For the purpose of distribution, there exist larger retail markets in market halls in the city.

VIENNA

A third but incomplete form of metropolitan provisioning is represented by Vienna, where, side by side with the central market halls, there has remained in existence an old open square market which is supplied by wagons exclusively, and which serves, to a great extent, the wholesale trade in vegetables. The market hall for the wholesale trade in meats, erected in 1865, has been supplemented in 1899, on account of increasing need for space, by a second hall, adjacent to the first one. To these was added, as late as 1906, a hall for the wholesale trade in vegetables. The wholesale trade in fish, chiefly in fresh water fish, is located in its own market hall on the Danube.

The Vienna wholesale trade has been established by the city itself, with considerable support from the State authorities. As a result the acquisition of property necessary and the somewhat insufficient railroad connections have been brought about cheaply and on favorable terms. The City of Vienna, which is in a good financial condition besides, has therefore been able to impose but small fees on the market traffic, a fact which has furthered its development considerably. The admission of bonded sales agents has also contributed to its success.

Great defects in the provision of Vienna are: The high freight rates, the necessity for much trucking of supplies to the markets from the freight yards, and the existence of a state consumer's tax, which is collected in the most roundabout way, according to old principles, which are entirely unsuited to modern metropolitan development, the city itself getting the benefit of only one-half of that tax. The wholesale trade in the open market, which is carried on in open square market fashion, has a disturbing influence and results in restless and strongly fluctuating prices, so that the provisioning system of Vienna suffers from incomplete centralization, in addition to fiscal and technical hindrances. But, even in Vienna, the increasing concentration of the wholesale trade in fresh foodstuffs in the wholesale market hall shows that this system tends to become permanent, especially when an adequate system of supply has been worked out.

Within the city there exist, for purposes of distribution, numerous small retail markets, some of them in market halls; with the latter the open square markets in the suburbs, which are free from the consumer's tax, are in strong competition, the same as in Paris. For this reason the retail markets in Vienna are also of little importance.

THE ORGANIZED PROVISIONING SYSTEM OF THE CITY OF BERLIN

REASONS FOR THEIR TARDINESS IN ATTACKING THE PROBLEM

Among the leading metropolitan cities, Berlin has come rather late to realize the necessity of supplying itself in an organized manner with fresh foodstuffs on a scale corresponding to its size—and this, in spite of the fact that the extraordinarily rapid development of the open square market system clearly indicated its transient character, and some change, particularly in the second half of the Nineteenth Century, became increasingly necessary. The success of undertaking organized provisioning was assured by the example of other big cities, like Paris, London, and Vienna.

This hesitation before a problem, whose solution was to be of benefit to the entire population, is explained by the fact that Berlin has become independent in its internal administration as well as in its communal life rather late, viz., with the introduction of the Act of City Regulations in the beginning of the Nineteenth Century. It is further to be noted that Berlin, being the Prussian Residence City, is placed under

special conditions, for which reason the City Regulations have, up to the present, not become completely applicable to it.

Here, as in so many other German cities, the flourishing town culture of the Middle Ages had been but too thoroughly destroyed by the Thirty Years War, and the authorities and representatives of communities could arrive at a realization of their duties and rights only after a State guardianship, lasting through centuries after that War. So that it took a long time before they were able to recognize and appreciate the magnitude of their problems and the measure of their capabilities.

After the Wars of 1864, 1866, and 1870-71, whose victories made Berlin the capital of the New German Empire and gave impetus to its growth, the city was beset with new undertakings, pressing and expensive, such as canalization, the water works, the lighting system, and finally the erection of the municipal cattle pens and slaughter-house.

THE FIRST ATTEMPT BY THE CITY ADMINISTRATION

The failure of the open square markets in the famine year, 1846 and 1847, led to the commissioning of a deputation to supply the markets regularly, with potatoes at least, which was the chief foodstuff of the poor population.

A few city officials who had become personally acquainted in their trips abroad with the advantages of central markets, especially that of Paris, started the first movement in this direction as early as 1848; but further action was delayed until 1863 and after.

VAIN EFFORTS OF PRIVATE UNDERTAKINGS

Seeing the evident hesitation of the City Administration, private enterprise, which was very active in the period after 1871, tried to relieve the precarious condition of the markets, and to derive commercial benefit from it at the same time. Here again, emphasis was laid only on the erection of market halls and not on the regulation of the market system.

In the year 1864, the Berlin Society got permission to build a market hall, which was to be opened in the year 1867. In spite of the fact that the State authorities intended to close the two nearest open square markets, in the interest of the new undertaking (the legitimacy of this step was combated by the city), it foundered. As a result of this, the square which was desired for a new market hall was refused. Further attempts of the above mentioned society in the years 1869 and 1872 were frustrated by the exacting conditions stipulated by the Mayor in order to safeguard the existing market traffic.

INTRODUCTION OF THE ORGANIZED PROVISIONING SYSTEM THROUGH THE CITY ADMINISTRATION

Under the pressure of the evils of the open square market system, which was growing less and less adequate with the changing living conditions of the capital of the Empire, the members of the City Administration gradually came around to the views first held by the State authorities. This was the case when, in 1875, the streets of Berlin were transferred to the control of the city itself, and in this way the removal of the traffic-hindering, unsanitary, and antiquated markets from the streets and squares had become a matter of its own concern. It was recognized that, because of its good financial condition, its high credit, and its economic strength, the city could establish and carry on a great common undertaking of this kind much more favorably for its inhabitants than anyone else. For this reason the idea of leaving such projects to private enterprise, in any form whatever, was finally abandoned. As a result of the preliminary investigations of a commission established in 1875, the

Mayor declared, in 1880, "that the idea is gaining ground among the city authorities, that Berlin cannot get along without market halls any longer, but that they are to be erected by the city."

At the same time, the plan of erecting market halls simply for harboring the existing open square markets was replaced by that of regulation and transformation of the entire market system.

The approaching completion of the city railway forced the City Administration finally to decide whether they would allow other than simple passenger traffic to be carried by that railroad. It was finally decided to allow only market stuff to be carried in addition to the passenger traffic.

With the decision to draw up a general plan for the erection of market halls for the entire city, the solution of the entire market problem of Berlin was tackled in the year 1881—rather late, it is true, but on a comprehensive scale. The city began the work with the careful consideration of its own local conditions and guiding itself by, but not copying, the existing establishments and experience of other big cities.

After the necessary preliminary work, the erection of a Central Market Hall was begun in 1883 and, after being connected with the railroad for the receipt of fresh foodstuff, the market was opened in 1886 and given over to the trade.

At the same time the city, in accordance with its decision of 1881, began the erection of numerous retail market halls, which were to replace the existing open square markets as distributors of fresh foodstuffs.

ESTABLISHMENT OF THE MUNICIPAL MARKET PLACES AND THE FORMATION OF THE PROVISIONING SYSTEM

As had been the case everywhere else up to this time, the two functions of receipt and distribution, which were performed under one roof in the new form of market hall, were considered as necessarily connected in reshaping the market system in Berlin. They sought to express this unity by combining both kinds of market traffic. This combination, however, makes more difficult the consideration of both of these parts of the provisioning system, which are by nature entirely distinct.

In working out the financial basis of the undertaking, the leading idea was that it be self-sustaining, the income meeting all expenses. Neither was support to be derived from taxation, nor was the market traffic to be burdened with excessive fees.

The aim was to be progressive in adapting the market establishments to the business, and to lighten the official machinery through constant simplification of the administration. The undertaking, which has cost about 28,000,000 marks in the form of a city loan, and which requires every year considerable sums for maintenance expenses, interest payments, etc., has brought considerable surplus, although only the central wholesale market has shown a favorable development. This has permitted the lowering of the stand fees to a minimum.

The market halls have been constructed along simple and appropriate architectural lines according to plans made by the city officials, and are regarded as models, because they thoroughly satisfy the manifold requirements made of them. Each one consists of a large hall level with the ground, which is divided by the central hall into long sections and which is supplied with one-story balconies. The brick walls are made heavy in order to maintain a uniform temperature; the roof, resting on iron columns and girders, is raised and subdivided into sheds over the broad passages or driveways; the main lighting in the day time is through skylights; the night illumination is by gas or electricity. Broad driveways pass through the hall, making it possible for market wagons to unload and load inside of the market halls. Narrower passages branch off from these, and alongside of the latter are ranged the stands.

The Central Market is provided with its own depot on the city railway, the depot being on a level with the galleries and connected with the ground floor of the market by elevators. When the market was extended, the arches under the railroad were rented.

New regulations, much more extensive than the open square market regulations, were necessary, because the traffic in the market halls, and especially that in the central market, is of a different character from that in the open square market. With the erection of the market halls the market traffic was forced from the open street into the city buildings. Formerly the city had only the right to collect stand fees in the open square markets, all the other functions relating to arrangement and order in the markets resting with the police; but now there were added requirements touching the internal administration, the trade, the subdivision and utilization of space, etc. For the satisfaction of these it was considered that the city itself could act more effectively.

Since the conditions confronted were entirely new, it was the intention of the city not to involve the market system with too detailed regulations, and so they are mostly of a general character. They regulate only the external form of the traffic, and assure the carrying out of the existing laws as far as they are related to the peculiar conditions of the market hall system.

In the regulations, stress is laid on the main idea that the halls, while open to everybody, are to be used only for the market purposes fixed by the city. The Central Halls I and Ia are open to the wholesale trade in fresh foodstuffs from 3 to 10 o'clock A. M., and, excepting the meat wholesale trade, from 5 to 7 o'clock P. M. Hall No. II is open from 3 o'clock, and all the other halls in which the wholesale trade (with the exception of the wholesale trade in fruits in Halls III and IV) is insignificant, from 4 o'clock A. M. until 1 P. M. All halls, excepting Ia, are open for retail trade from 6 A. M. until 1 P. M., and from 5 P. M. until 8 P. M., and on Saturday until 9 P. M. On Sundays and holidays all the markets are closed at 9 o'clock A. M.; neither the receipt nor the wholesale marketing of meats is permitted on those days. In determining what articles were to be sold in the markets, it is worthy of notice that, while allowing the sale of all raw natural vegetable and animal products, all living animals, with the exception of the bigger cattle, manufactured articles whose production is immediately connected with farm and forest industry, with garden and orchard husbandry, or with the fishing industry—yet the sale of spirituous liquors is prohibited. The sale of the so-called delicatessen, preserves, house and kitchen utensils, and even of the simpler articles of dress, is not forbidden.

As a result of keeping down the expenses of the undertaking, the stand fees are not too high; in most cases they are lower than the sum of the stand fees and expenses of carrying on trade in the open square markets combined. It is further to be considered that the market hall trade is much more advantageous than the open square trade, and that a permanent and fixed stand can be more quickly and effectively laid out, and thus helps trade much more. In fact, the State authorities had made the closing of the open square markets in Berlin conditional upon keeping the total fees derived from the market halls down to the level of those derived from the open markets. The monthly rents for stands were made considerably lower than for those rented by the day, in order to encourage longer tenure.

The Central Market, with its railroad connection, serves primarily to supply the Berlin intermediate trade with fresh foodstuffs. The latter has found in it the most appropriate place for its activities in the wholesale field. In the interest of distant producers who cannot come to the market themselves, but can only send their goods, there has been formed in Berlin the Institute of Sales Agents. Toward this Institute the city took a passive attitude in order to allow it to work out its own form. On depositing a bond of 20,000 marks to cover various city requirements, and then those

of the producers, a small number of municipal sales agents are allowed to do business in the central market. They sell freely like the other market wholesalers, or at auction.

The prices obtained by these sales agents have to be reported to the authorities for publication in the Official Market Bulletin; in it the City authorities and the State market police jointly publish the prices obtained every day in the wholesale market. This bulletin, in which the prices since the beginning of the market hall undertaking have been published quickly and reliably, appeared at first twice a week, and later daily; it serves the authorities, newspapers, technical papers, producers, dealers, and associations as a safe basis for their reports, balances, and transactions.

PRELIMINARY CONDITIONS FOR THE DEVELOPMENT

The City of Berlin has been especially adapted for the development of a system of organized provisioning through the absence of one-sided or obstructing forces, and through the astonishing smoothness of the preliminary steps. For this reason Berlin may be regarded as a model for the study of a scientifically economic system of provisioning of large cities. The State authorities are lending a helping hand to the city in its work of provisioning. The railroads, which are generally supposed to aid in the advancement of the public welfare, do in fact lighten the work of provisioning through lower special rates and quick transportation of fresh foodstuffs.

In connection with this branch of its self-government, the city is not tied down by any limitations. The provisioning system is not exploited for the use of the budget, since it is not burdened by a tax on foodstuffs. The market system of the big city has been completely worked out in accordance with clear principles, and is conducted carefully, considerably, and in accordance with modern views. The market traffic is, as far as possible, left to itself without, however, allowing it to degenerate into chaotic or monopolistic conditions.

DIFFICULTY OF DETERMINING THE EXTENT OF THE ENTIRE PROVISIONING

It is necessary to emphasize the fact, a fact which holds for all cities having no direct control over the receipt and sale of goods, that the actual magnitude of the provisioning of the City of Berlin can be determined only approximately. The Central Wholesale Market is not the only place where the goods are received, as outside of it dealers and consumers receive goods by freight, express trucks, individuals, and finally through the mails, the amount received in this way being hard to determine; accordingly, the entire in and outbound traffic on the railroads and by water does not give an exhaustive total. For this reason the trade in fresh foodstuffs in the big city is nowhere completely recorded in the statistics, and cannot be ascertained from the size of the establishments. Even the business done by the market stand keepers is not exactly known. All statements about the consumption of the city with its millions of inhabitants are but general estimates beyond the limits of the available figures, and are not subject to verification. Under these circumstances the statements of the development of the business in the Central Wholesale Market, which form the most extensive and most clearly defined division of the provisioning system of Berlin, are the safest guides in estimating the size of that provisioning system.

DEVELOPMENT OF THE CENTRALIZATION OF THE RECEIPTS IN THE RAILROAD YARD OF THE CENTRAL MARKET

Naturally some time had to elapse before the system of provisioning had taken shape and had attained a practical significance.

All the supplies of fresh foodstuffs, which reach the city from the country, are

united in the Central Market. Although at first the supplies by market wagon from the neighboring country were greater in quantity, the supplies by railroad from slightly remoter places quickly increased and were concentrated at the market railroad depot. Only the products from nearby are brought in wagons. The transportation of meats from the municipal slaughterhouse to the Central Market is effected mostly by wagons. In addition there are occasional receipts by water—such as fruit and fresh water fish.

The freight traffic to the market railroad depot was rather restricted in the beginning, because of its peculiar position in the city railway system. Then, two trains of 30 cars each were allowed every night. As early as 1893 an extension had to be made which, though it was as great as possible, resulted in the enlargement of the traffic by one night train only.

The combined traffic (passenger and freight) was difficult and expensive, was hindered by formalities, and by the short period allowed for unloading the goods; so that a large number of market wholesalers preferred to have their stuff sent to other freight depots in Berlin, and to transport them thence by express wagons to the Central Market. These difficulties led, as early as the year 1887, to the introduction of reasonable special rates (which were later still further reduced), to more expeditious forwarding schedules, and to other changes making traffic easier.

Since that time, the supply of goods by the market railroad has shown a continuous and extraordinary increase. In the first traffic year the receipts amounted to 4,000 tons (metric); in the second it was about 12,000 tons, and in the third it rose to about 29,000 tons, after the above mentioned improvements were introduced. Then a remarkable further rise took place, so that in the year 1909 it amounted to 120,000 tons. In 23 years it had thus increased 30 fold. The market depot serves mostly for the receipt of fruit, especially foreign fruit. The outbound traffic was very low in the first year, amounting to 54 tons; in the second year it was 2,000 tons, or one-sixth of the inbound traffic, and in the year 1909, after strong fluctuations, it had increased only to 4,000 tons; so that now it forms about one-thirtieth of the inbound traffic. The immense inbound traffic, so far exceeding the outward bound traffic, shows that the entire receipts, except a small fraction, are consumed in Berlin, and is an indication of the steadily growing centralization through the market railroad depot. The outbound trade serves at the same time as a safety valve for the Central Wholesale Market, which guards the wholesale trade from too violent price reduction due to over-supply.

As a result of this development, as was the case before the extension was made, the market railroad traffic had reached almost ten years ago the limit of its capacity, which is far from able to satisfy the daily pressing requirements of the inbound traffic.

Since a further extension of the market traffic is impossible over the city railway, the railway officials found themselves forced to restrict the excessive demands on the market railroad; this was done by allowing receiving privileges at the market depot only to those who occupied stands uninterruptedly for periods of six months. The effect was slight because many dealers were not frightened away by the rather considerable extra expense for stand fees, and paid them in order to assure themselves of the much more valuable privilege of receiving their goods at the depot. Further restrictions were therefore introduced.

The difficulties due to the necessary traffic restrictions on the market railroad cause a heavy loss to the entire Central Market System of Berlin. But at the time of its establishment the city administration considered the railroad connection under the then existing conditions as sufficient, and such a great development as has actually taken place was not anticipated.

The railroad facilities, it is true, are far less inadequate in Berlin than they are

in London, Vienna, or even in Paris. But because they place the market dealers who have gone into the business at a later period at a disadvantage, for no fault of their own, and thus make their competition with the older dealers, difficult enough at best, still more difficult, they interfere with the healthy development of the wholesale market trade. The system of provisioning is further impaired because a considerable share of the incoming goods is kept away from the Central Wholesale Market by the necessary exclusion of a continually increasing traffic from the market railroad depot.

As a result of these facts the city administration of Berlin must provide a remedy at once.

DEVELOPMENT OF THE WHOLESALE MARKET TRADE

The wholesale market in the Central Market Hall has had a favorable development from the very beginning. The area occupied by it was tripled by the year 1909. At the opening in the year 1886, Market No. 1, with an available area of 4,300 square meters, was almost entirely occupied. The demand for the stands shows in the course of the years an almost uninterrupted growth, so that after five years the market was constantly overcrowded. Every bit of available space was utilized to the utmost; also, by the renting of advantageously located street railway arches, provision was made as far as possible for further development. Since these extensions were not sufficient, there was opened, in the year 1893, a second Central Market with an area for stands of about 4,200 square meters, immediately adjacent to the first market, and, like the latter, lying along the railroad depot, which had been lengthened at the same time. This was done in order to make provision for the increasing concentration of the wholesale market business. Both markets, with an usable area of approximately 11,000 square meters, have, however, been overcrowded for years, and it has been impossible to give any help through the further renting of city railway arches.

The wholesale dealers of the Central Market have become great with its growth. The scope of their business and their importance has increased from year to year. The Institute of the Municipal Sales Agents of the City has not interfered with the business of the independent wholesalers, as was feared, but has only furthered their trade through competition. The municipal sales agents have risen but slowly to their present great significance in the Central Market; their number, diminished from 15 to 6, divides itself into the single branches of the wholesale market trade; their combinations extend over the entire interior and into foreign countries, and the extent of the business amounts, for each one of them, to millions of marks. The provisioning of Berlin through the Central Market, as far as the receipt of stuffs is concerned, has been just as successful as in other large cities having wholesale markets. Its source of supplies has been extended to the whole empire and also to foreign countries. The Central Market of Berlin has a determining influence in the widest sense on the producing country round about it, according to its needs and its prices. An enormous amount of fresh foodstuffs flows daily to the one spot. The goods are just suited in quality and quantity to the need and the demands of the metropolis; their prices, in so far as they are fixed by the wholesale market itself, may be called low, and as a result of the steadiness of the supply are subject only to minor variations. The influence of insufficient profits, it is true, shows itself now and then in a certain weakness of business, but is relatively small, because the needs of the big city do not diminish but, on the contrary, are continually increasing with its incessant development. Bad crops and plagues influence the supply and the level of prices, but they cannot now lead to such famines as occurred even as late as fifty years ago.

Especially successful has been the development of the wholesale market trade in meat, which forms in the city an essentially larger and more important item of diet than it does in the country. In spite of the difficult business conditions under the

pressure of import restrictions and in spite of the insufficiency of room in the market, the wholesale trade in meats is constantly growing and is controlled from the Central Wholesale Market. The wholesale trade in game and poultry, which was carried on formerly at railroad stations only, has become the standard for all of North Germany. The wholesale trade in fruit and vegetables has also constantly increased so far as the space in the Central Market permits it.

Only the wholesale market in fish has remained backward, and this is caused solely by the failure of the supply. The fishing in the rivers in Middle Germany is becoming less and less profitable because, through the necessary regulation, especially of the flowing waters, the spawning places have been done away with in large numbers, and the water has become strongly polluted with sewage and chemicals, and has become poisonous for the fish. Better results are obtained by the rather expensive fish breeding, which is being carried on to a constantly increasing extent. The sea-fish catch has, up to the present, played but a small part in the Central Wholesale Market of Berlin.

The sales at the Central Wholesale Market are carried on in a perfectly business-like way. The free sale of butter, cheese, eggs, and potatoes balances the increased price of fish, game, poultry, fruit, and vegetables. The buyers are retailers, free and market dealers, representatives of stores, supervisors of canteens, restaurant keepers, etc. The goods sold are taken away in wagons. The facilities for carting away the stuff are insufficient because too many of the wagons, up to the closing of the wholesale market, crowd the streets adjacent to the Central Market, which are much too narrow and entirely unsuited for that purpose. The streets are utilized for trucking to such an extent that traffic, which in the forenoon is very heavy there always, becomes almost impossible, and can be kept up only with great difficulty by the aid of the police.

The receipts of the Wholesale Central Market are entirely cleared away every day. The remnants find a favorable sale in the traffic of street vendors in fresh foodstuffs; otherwise they are put, like provisions, in the cellars, in which cooling and freezing compartments suited for the purpose are constantly coming more in demand.

Although only the Central Market Halls I and Ia were intended for the wholesale trade, the city administration tried also to establish wholesale markets adjacent to some of the retail markets. The attempts failed in spite of the concessions, which went as far as the complete removal of stand fees, as a result of the concentrating power of the wholesale market. But, as the wholesale trade was free to spread outside of the Central Wholesale Market, there has been developed in the retail markets near the periphery of the city a wholesale trade in meats and vegetables, which is rather insignificant, and which is confined to such stuffs as can still be brought to the markets by the peasants themselves from the country nearby—so that there has been retained in these markets, to a certain extent, a part of the former open square market traffic.

There has also been formed in Berlin a considerable free wholesale trade in fresh foodstuffs, which is independent of the municipal market organization. In spite of the advantages of its uncontrolled trade, as compared with the wholesale market trade, it is of small importance, although it is of advantage in the provisioning of Berlin. The relation of the two kinds of wholesale trade to each other is hard to fix, because both are not separately recorded in the statistics, and because the free wholesale trade occurs only in isolated instances.

On account of the limitations and overcrowding of the Central Market, a large number of new applicants among the wholesalers must be turned away. This has favored the settlement in the immediate neighborhood of the markets of a subsidiary wholesale business, especially in orchard fruits, tropical fruits, and fish, which is not bound by the limitations and rules of the market, which holds its own auctions in its

stores, which begins business earlier and carries it on in the afternoon also, just as it sees fit—things which are prohibited in the Wholesale Market. In this way it causes severe loss to the market wholesale trade, so that it is getting harder and harder, especially for those wholesale dealers who are not entitled to receive stuff directly from the railroad in the market, in spite of their undeniable advantage in occupying stands, to compete successfully with these outsiders. A few such outside wholesale dealers divert their stuff, e. g., poultry from Galicia, immediately on its arrival, to the Silesian Railroad Station, and others buy up the supply of carp before their arrival in the Central Market for purpose of speculation.

THE NECESSITY FOR THE NEW LOCATION OF THE CENTRAL MARKET

Under the existing conditions the Central Market is hampered in the receipt of goods by the insufficiency of the railroad facilities, and it is hampered in the further development of its wholesale trade by the insufficiency of room in the Halls. The market wholesaler cannot obtain the new space which he requires as his business increases from year to year, and thus the addition of new wholesalers, which is necessary for competition, is interfered with, and the settlement of the latter outside of the market halls leads to a breaking up of the provisioning arrangements. A radical change has become absolutely necessary in order that the unique business of the Berlin Central Wholesale Market may have a development corresponding to the continually growing demand.

As early as the year 1901, the Police Department informed the Mayor in reference to the renting of railway arches "that he could not count on a further concession in the future; that, on account of traffic and safety demands, it had already become necessary to prepare the Central Market for getting rid of its wholesale meat department." In the year 1902, the proposal of the railway officials to enlarge the market depot because the traffic facilities were insufficient, was denied. This enlargement would have been disproportionately expensive, and would have required a considerable encroachment on the Central Halls. At the same time it was decided to remove the wholesale meat market which, on account of its astonishing development, required new facilities most urgently. The meat market occupies a singular position in the Central Wholesale Market because of the large supply which comes from the municipal slaughter house by wagon. It requires special market facilities because of the extremely perishable character of the fresh meat. The new wholesale meat market will be located in the place undoubtedly best suited for it—immediately adjacent to the municipal cattle pens and slaughterhouse, where provision for extension has been made and where connection with the railroad is assured.

At the same time, on account of the congestion of traffic in the Central Market, the removal of the entire wholesale market trade was considered, and a deputation was empowered to make a trip for the purpose of examining the markets of other large cities; this took place in 1905. After a thorough consideration the municipal authorities made the final decision, in the year 1909, to remove the entire wholesale market trade, as well as the wholesale meat trade, to the above mentioned place in the northeast of Berlin.

As a result of this latest radical decision for the provisioning of Berlin, the city stands before an undertaking of great magnitude and consequent significance. The fact that the Central Market is to be removed from the center of the city to its periphery, and especially to a neighborhood which is as yet little developed, cannot be lightly regarded. The loss that it suffers in giving up its incomparably favorable location (which the market, as a whole, can no longer occupy, and in which it has maintained itself, and would continue to maintain itself under the burdens of restricted traffic and crowded space) is more than balanced by undeniable advantages.

Though additions or extensions inside of the city limits are out of the question, the business is at least again united in a favorable location with the wholesale meat market into a single wholesale market. There, the city already has command over sufficient land, and a mighty establishment having a total value of 25,000,000 marks will be created. A further extension in railroad connection as well as in market space is possible on the property of the city, and would otherwise not have been difficult in this outlying district.

The establishment will be able to maintain a railroad yard for market stuffs which is not a pocket—but a through yard; and will thus have the advantage of a mobile, unrestricted, and uninterrupted movement of freight on the railroad which, besides, is large enough for the entire city's supply of fresh foodstuffs. It is estimated that the incoming freight will be at least 200 railroad cars daily—as against a maximum of 90 cars on the old market railroad depot.

The peripheral location of the Wholesale Market will hardly exercise a restraining influence on the market wholesale trade, for which the location in the city is not so essential as that it be concentrated at a spot where there are available a large supply and an extended market. The new Wholesale Market, on account of its adequate railroad connections, its spaciousness, and newness, will exercise a strongly attractive influence on the entire wholesale trade, and will, as far as can be seen in advance, draw to itself a considerable part of the existing free wholesale trade, which cannot but increase the centralization of the receipts of stuff for the provisioning of the city.

The traffic-crowded center of the city will then be rid of the great numbers of farm freight wagons which come night after night, and also of the distributing traffic which concentrates itself around the Central Market until late into the forenoon. In the periphery such concentration of traffic is much less objectionable, especially as the streets will not be used there for the lining up of wagons, but separate yards will be provided for that purpose. That the length of haul favorable only for one-quarter of the city will be considerably increased for the other three-quarters is worth only slight consideration in placing the Wholesale Market, which supplies only retailers, because the latter have already been compelled to waste much time in getting supplies. In addition, the northeast section of Berlin shows the greatest density of population, and here lies also the center of gravity of the provisioning system.

ESTABLISHMENT OF MARKET HALLS FOR DISTRIBUTION

At the time of the open square markets in Berlin, as in other large cities which possess central wholesale markets, the retail trade in fresh food supplies was insignificant, and it was considered appropriate to allow the open square markets to exist in their original form as retail markets. It was expected that, especially when brought under the shelter of market halls, they would assist in the distribution of market stuffs on account of their being scattered all over the city, and as a result the market halls would show a healthy development.

Therefore, at the same time that the Central Market No. 1 was erected in 1886, the first three retail market halls, II-IV, were opened. They served to replace the eight open square markets in the interior of the city. In the year 1888 four more halls, V-VIII, were opened, and, at the same time, the last nine open square markets in Berlin were closed. In the year 1891 the last six halls, IX-XIV, were opened in the outlying districts.

It is of deep significance for the provisioning of Berlin that thus all the open square markets were done away with in the short period of five years, and have, to a certain extent, been replaced by the market halls. In this way the transition from the old form of marketing took place quickly and completely, so that the harmful conditions of the period of transition could not find firm footing. Only a few

large cities have been so fortunate as Berlin in having such simple conditions of transition.

The new market halls could not be so favorably located as the open square markets had been, since it was desired to free the old market squares from all market traffic in the interest of the ordinary street traffic.

In the design of the new market halls it was considered that the space, as compared with that occupied by the open square market, could be materially reduced. The old markets were open only a few days in the week, while the market halls could be kept open for business every day in the week for a larger number of hours each day. Many of the stand keepers who successively kept stands in several of the open square markets on the days when they were open needed now but one daily stand in the market hall. Room was, however, provided for a number of stands sufficient to create competition and to prevent an artificial fixing of prices.

The business in the retail market halls in the years 1886 to 1892, from the opening of the first markets to the closing of the last open square market, and, after that, up to the opening of the last market halls, was under the influence of the transition stage.

The dealers removed their business to the market halls with great reluctance. They had worked up an assured custom in the open square markets, where they had been selling their wares on a custom basis from year to year on the days when the markets were open; they had to make up their minds to hire fixed and permanent stands under entirely different and unknown conditions in market halls, which were not at all so favorably located, in order to carry on their daily trade there. Many dealers therefore preferred to go to the still existing open square markets in Berlin, and, especially after their complete suppression, to the existing open square markets in the neighboring suburban places. Some of them, however, began independently, and free from the markets and halls, to carry on a trade in fresh foodstuffs in stores and in the streets.

But, since the majority of them at least dared the attempt to make a living in the market halls, almost all halls at the time of opening showed a good, or at least tolerable, occupation. Also the buying under the attraction of novelty was at first lively, but slumped regularly and very often very strongly as soon as this attraction had disappeared. The occupation of the stands decreased noticeably in the following years, and in some markets this decrease was very considerable in a very short time.

The favor of the consumers still remains with the accustomed open square markets. After the closing there remained in many places a generally unjustified prejudice against the market hall system, so that even later the buyers preferred the open square markets in the suburbs and other selling establishments dealing in fresh foodstuffs.

Still, the market hall system managed to maintain itself through the period of transition, the custom increased with growing familiarity with the place, and with increased business the sale of the goods was satisfactory and profitable.

Each market hall, in spite of the uniformity of the undertaking as a whole, has assumed a character of its own which expresses itself in the variety, quality, and grade of the goods, and in the level of the prices. In some markets near the outer limits of the city producers from the vicinity occasionally come, but the stand keepers are mostly dealers who get their goods from the Central Wholesale Market. The wholesale prices, which are daily made in the latter place, therefore fix those which are demanded in the retail market. As a result the custom of price cutting formerly practiced by the dealers for the purpose of making quick sales has been considerably restricted, and even the few producers have become used to maintain the prices with the other dealers.

FAILURE OF THE MARKET HALL TRADE AND SIMULTANEOUS DEVELOPMENT OF THE FREE RETAIL TRADE

Only after the passing of the transition period, when all the market places had been opened and the large number of dealers who had hoped to establish a lasting trade in the markets had diminished to the number of the successful ones who remained in the halls to cater to the requirements of a constant number of customers, begins the normal market hall trade established on permanent conditions.

At the end of the business year 1892 it appeared that, of the 25,500 square millimeters of market space prepared for occupation, including the space for retail trade in the Central Market, about 15,900 square millimeters were utilized by the retail trade in fresh foodstuffs; which corresponds to 3,200 stand keepers at most.

In order to convey the meaning of this number and to fix the scope of the market business at that time it is well to present the figures of the earlier open square market traffic for comparison.

In the year 1885, the last under the old provisioning system, there were distributed altogether about 10,000 stands, mostly to dealers, in the open markets, in each of which business was carried on only a few days in the week. As the dealers carried on business daily and, therefore, had taken stands in several markets on different market days, their number amounted at most to half the number of the stands; so that there were probably 5,000 dealers who carried on the retail trade in the open square market; at that time there existed, in addition, but an insignificant retail trade in market stuffs in stores and in street traffic. These 5,000 market dealers almost alone supplied the entire population of Berlin, which, in the year 1885, numbered 1,320,000 inhabitants, so that each dealer supplied about 50 households of 5 persons each.

When one considers that the stand keepers in the market halls are more efficient than the open square market dealers used to be, and that, therefore, their circle of customers is more extended, this widening of the business area, as well as the departure of a number of dealers to the open square markets of the suburbs, cannot explain the fact why, in the year 1892, when Berlin had 1,580,000 inhabitants, the market halls held only 3,200 dealers. Their number in the markets has not only not increased with the growth of population, but has actually decreased about two-fifths. Considering the fact that the population, exceeding a million and steadily growing, must depend necessarily for the supply of its fresh foodstuffs on the retail trade, one is justified in the assumption that numerous retail dealers must have found a firm footing outside of the markets, and that quite a number of new vital forces must have been infused into this branch of the free retail trade.

The occupation of the market halls, which was small anyway, has shown through the years a continuous decrease. At the end of the fiscal year 1909, when Berlin had a population of about 2,100,000 inhabitants, it amounted to only about 13,000 square meters, which corresponds at most to 2,600 stand keepers.

This decrease in the number of market stand keepers, which is in direct contrast to the development in population, justifies the above assumption and proves that the retail trade in the market halls is becoming less and less important in the distribution of fresh foodstuffs. In contrast with this, the number of retail store dealers has, without doubt, correspondingly increased. The persistent decrease in the number of market dealers appears more significant when one considers that a standstill, in comparison with the great growth in population, in itself shows a lack of vitality.

With the exception of the retail trade in the Central Market No. I not a single market hall has shown a greater occupation than that which it had in the first year of existence. In all of them the occupation decreased from year to year, in many cases even to a considerable extent; only a few of them have shown small

forward movements, and four of them show a tolerably good standing and business sufficient to make them self-supporting.

The failure of the retail market hall trade was entirely unexpected, in the light of the development of the open square market, and it appeared especially striking in comparison with the splendid development of the newly erected Central Market Hall. The authorities concerned in the task of provisioning, but especially the municipal authorities, the trade associations, and the market stand keepers themselves, tried to find out the reasons for this phenomenon. They uncovered numerous factors which influenced, and are still influencing, the undertaking of the retail market halls.

Stress was laid on the influence of the hindrances and traffic interferences mentioned above, and which are caused, partly, by the market system itself; but those were only of a passing nature and have disappeared almost entirely.

Then the locations of the markets within the city were drawn under criticism.

The inconsistency in the development, which shows itself between Market No. I, on the one hand, and Markets II, III, and IV, on the other, and which shows itself, also, in the fact that the occupation of the market stands in the center of the city is barely maintained even in the midst of a dense population, and that those in the outlying districts are constantly going back in spite of the increase of the population in those districts, forces one to the conclusion that the main cause for the failure of the whole undertaking cannot lie in the location of the markets.

Then the competition of the retail trade in fresh foodstuffs outside of the market halls was made a subject of investigation.

The severest and most successful competition for the entire market retail trade in Berlin has arisen with the rise of free retail dealers in fresh foodstuffs, who are not kept together in the halls and who obtain the provisions from the Central Wholesale Market like the others. They have arisen under free competition, while the market hall trade has been bolstered up by a monopoly.

At the time of the open square markets there were in existence food stores; but after the introduction of the new market system they began to increase in number. Their spread was favorably influenced by the fact that the number of retail trade places in fresh foodstuffs was diminished by the erection of the halls, since each hall was intended to replace several open square markets. In this way marketing was made more difficult for many consumers by the greater distance of the household from the market. The spread of this free retail trade took place the faster the more the new market went back. At first the free retailers were to be found only in the neighborhood of the markets, in order to take advantage of the business going on there, or they settled down around the squares formerly occupied by open square markets, where cellars and stores on the ground floors of apartment houses had been constructed for them.

Beginning with the former market centers and halls they settled all over the city in increasing numbers, according to demand. The first ones who made use of the freedom from market restriction and of favorable location were meat dealers and dairy product dealers; they were followed by dealers in other market stuffs, especially in fruit and vegetables.

The small retail trade is carried on mostly in small stores, in which the dealers have the not unimportant advantage over those in the market that the store is connected with the residence, and that the wife can take care of the retail trade while the husband attends to obtaining stuff from the wholesale market. But, aside from this, there have also been formed numerous large establishments, which have a number of self-sustaining branch stores all over the city or in single districts of the city; finally the larger department stores have installed foodstuff departments.

The market trade is furthermore influenced by the wandering street trade. At

the time of the open square markets the producers (farmers) made use of the privilege of selling directly from their wagons or of going with their baskets from house to house; and when the market halls were opened the street trade, which was carried on in the simplest fashion, began to grow noticeably. Enterprising men supplied themselves, mostly on credit, with fresh foodstuffs, especially fruit, vegetables, fish, and even flowers from the unsold daily remnants of the market wholesale dealers, which were sold cheaply to them. Then, with basket or wagon, they went through the streets or stopped as long as they could at suitable places, especially at street crossings, and sold out of hand or directly from the wagon. This simple and inexpensive trade gives poorer people a chance to make a living and has drawn to itself for this reason a considerable number of the dealers of the former open square markets, and also many of those in the market halls who have lost their means with the failure of the markets. Since the street peddlers sell their goods cheaply and can go wherever there is need of them they have an assured and large trade.

Next, the street peddlers began to congregate in the neighborhood of the markets, especially in the center of the city, and drew away the market customers at their doors. There were formed in the approach streets complete street markets where from 30 to even 133 street peddlers could be counted, most of them with wagons. They would wait in long lines at the street curbs, and they formed, in a certain sense, markets in their primitive condition without regulation or order, by circumventing the prohibition of the open square market.

The growth of the wandering street traffic, especially in the vicinity of the markets of the outlying town districts, had a great influence on their business. The existing regulations and stricter enforcement of the market rules were not sufficient to remove the street traffic even within the markets, entrance to which could not be denied to the "flying" dealers with their goods, who claimed that they wanted to buy something in the market. Punishment was without effect, for many of the smaller dealers, who lived from hand to mouth, were unable to pay the fines which were imposed and were the more willing to take a prison sentence, since they were then in a better condition, especially in winter, than if they carried on their calling. But the conditions in the vicinities of the markets, which had become unbearable, made it necessary to take steps against the street traffic, and the city administration yielded to the police demands after considerable hesitation. It was inclined at first to deny the request of the police because it could not be convinced of the necessity and advantage of regulation which cut so deeply into the retail trade conditions of the whole city, and because it was fundamentally inclined to set aside regulations interfering with a custom which enabled many poor people, the economically weaker members of the community, old and otherwise incapacitated men, to make an honest, although rather unremunerative, living, and so decreased the number of paupers.

Through the police regulation of the year 1898 street traffic in the vicinity of the halls was prohibited, although not entirely removed, and so at a later date crowded back from the market halls, it spread to the more remote streets to such an extent that the city administration was forced to take much severer steps against the street traffic and to restrict it to narrow limits in the interest of the city's own market halls and that of the dealers doing business in them, as well as in the interest of the entire retail trade in fresh foodstuffs which occupied stores. The regulation of 1894 serves to prevent the congregation of great numbers of street peddlers in one place, or their stopping for a long period on the chief avenues. The city administration, however, is still unfavorably inclined toward the demands of the rent-paying retail dealers to restrict further, or entirely remove, the street traffic, which, in some respects, is indispensable.

All the attempts of the city administration to further the trade of the markets, and

all the concessions to the requirements of the market dealers have been without lasting result. In the markets which showed the greatest retrogression the stand fees were repeatedly lowered to a considerable extent. At first this led regularly to an increase in the number of stand occupants, since many of the old stand keepers enlarged their stands and new dealers dared to rent them. But just these new men were the first to be disappointed in their expectations, and almost all of them departed in a short time; as a result of which the city administration discontinued such lowerings of fees as having no relative influence. The failure of the market business cannot be ascribed to the magnitude of the stand fees, which are mostly lower than store rents. The stand fees play but a small part in a good going business, and when trade fails, the reduction does not compensate for the loss.

Since all attempts to revive the trade were without result the city administration was forced to close those market halls which showed the greatest falling off for market purposes, and to use them for other purposes, so that in the year 1898 Market No. XII was closed; in the year 1909, Market No. III; in the year 1910, Market No. XIII; and it seems that in a short time more will have to be closed. The closing of the market halls to the retail trade has been because the fact was recognized that the undertaking was a failure.

CAUSE OF THE FAILURE OF THE RETAIL MARKETS

The fact that the retail trade shows activity only in the Central Market indicates the reason for the deterioration of the retail markets side by side with flourishing retail stores of other kinds. In the Central Market almost all wholesalers, with the exception of the wholesale meat dealers, carry on at their stands a retail trade, after the conclusion of the wholesale business. As the goods sold here are entirely fresh, without having suffered through passing through the intermediate trade, the retail trade of that place is lively and constantly developing. In spite of the fact that the central market is situated in the midst of a business locality which is losing resident population rapidly, buyers in addition to the consumers themselves, come there, mostly by the street railway, from distant places all over the city in order to take advantage of the favorable conditions at the Central Market.

The retail trade in the Central Market corresponds to the sale of the market goods in an open square city market, which controls the entire provisioning of its city by combining in itself the receipt and the distribution. Through the closing of the open square markets in Berlin, the close connection between receipt and distribution was broken, and the latter was dissociated from the receiving market, except for the small fraction of the retail trade carried on by the wholesaler in the Central Market. The retail markets erected for the purpose of replacing the open square retail markets are therefore really not markets at all in the old sense. Since they are not places where goods must necessarily be received they lack the significance of markets, which is the secret of the success of the open square retail market; in addition, they lack the essential feature of market procedure, the formation of prices, since these are already fixed at their lower limit by the selling prices in the central market.

Through the organization of the Central Market not only has the dissociation of the receipt from the distribution taken place and the first part of the problem in the provisioning of big cities been solved, but there has also been accomplished a complete transformation in the business of distribution. On the foundation of the wholesale market, which centralizes the supply and forms the prices, there has been created a system of decentralization to suit the demand of the widely scattered consumers of fresh foodstuffs; and in this way the second part of the problem of the provisioning of large cities has also been solved; viz., that of distribution.

Under these circumstances the conclusion to be drawn for the future is that the business of the retail markets is bound to be completely extinguished the more decentralization of the free retail trade establishes itself.

The existence of the retail market halls, however, has safeguarded the transition from the old form of distribution through retail markets to the new form through retail dealers from the severe shocks which might have become of serious moment to the entire provisioning system of Berlin.

THE ORGANIZATION OF THE PROVISIONING SYSTEM FOR THE POPULATION OF LARGE CITIES

Significance of the Wholesale Trade in the Central Wholesale Market for the Receipt of Foodstuffs

As far as economic processes can be at all influenced by organization the provisioning of large cities with fresh foodstuffs has been effectively solved by the organization of the Central Wholesale Market.

In the process of provisioning the market forms the necessary meeting point for the converging supply and the diverging distribution; in the smaller city this necessary point is supplied by the open square market and in the larger city by the central wholesale market. The magnitude of metropolitan cities, however, forces the production and consumption so far apart that the immediate transfer of fresh foodstuffs from one to the other becomes impossible. The central wholesale market serves only the intermediate wholesale trade, while the producers and consumers, for whom going to the markets of the large city has been made difficult or impossible, remain outside of the organization. The intermediate market wholesale trade has remained the only tangible connecting member in the dismembered organization of the provisioning of large cities, which leads from the isolated units of production in the country through the ramified buying trade, through the localized market wholesale trade, and through the extensive retail trade of the large cities to the dispersed consumers of the large cities. The system of provisioning metropolitan populations depends upon the business skill of the market wholesale trade. Impelled by its own interest it becomes an active tool in the provisioning system and by its means the latter is accomplished in an impersonal and matter of fact way, quickly and surely, for the benefit of the millions of inhabitants.

At the same time the problem of the centralization of the receipts is also solved. The central market has a stimulating influence on the wholesale trade, because it gives the latter facilities to carry on its business. Toward it, therefore, there is a constant flow of the independent wholesale trade which generally begins and matures outside of the market of the large city. This concentration effects, in its turn, an increasing aggregation of fresh foodstuffs in the wholesale market; and thus results the centralization of the receipts, which is the essential condition for a system of metropolitan provisioning through the concentrated market wholesale trade.

The market wholesale trade which tends to become monopolistic and inclines to price fixing and raising by holding back or interfering with the supply is completely rounded out by the establishment by the city authorities of the Institute of Municipal Salesagents—the establishment being legitimate and necessary. This Institute gives the Central Wholesale Market its character of an open communal establishment, in contrast with the purely commercial tendency of the independent market wholesalers. The sales agents, who cannot carry on any trade on their own account, derive a profit only from the open auctions, which they alone are empowered to hold. Through them the Central Wholesale Market becomes an exchange for products;

there is created a consignment trade in which the known producer sends his goods to the known agent for a buyer who is not yet known. According to a fixed rule the goods sent thus to the market have to be sold for spot cash to the retail dealers of the city, and it enables the smaller farmers who are far removed from the central market and who cannot personally come to the city market to take part in supplying the market by sending their goods by the swiftest routes to the Central Wholesale Market, and by leaving their sale to the agents, who give them immediate cash payment. Thus through them an extension and strengthening of the basis of production are effected and goods are attracted to the market and sold with the greatest rapidity. The full value of a dependable and skilled sales agency shows itself especially at times when there is a sudden shortage in supplies.

The Central Wholesale Market has raised the entire market system of the city to a higher and more efficient plane. The supply of the needs of the city does not depend any more on the whim of producers or commission merchants; it has become the business interest of the market wholesale dealers, united in the central market and powerful in their union, who make the constant and always increasing need of the city the constant source of their profits. The enormous extent of the field of production and the wide sources of the supply enable them to play off against each other the over and under-production of the various localities and to even up the supply before fluctuations can take place. The steadying of the supply is a great advantage for the Wholesale Market and is, at the same time, the chief requirement in the provisioning system of a large city.

The business policy of the market wholesalers furthers the solution of this problem in a similar way by steadying the prices; for, on the one hand, the fact that they are independent of the local producers prevents dictation of prices on their part, while, on the other hand, the wholesale dealers themselves cannot fix prices, but are forced to keep them in the Central Market within normal bounds by the great influx of stuffs, and especially by the competition of the sales agents.

The communal and public character of the Central Wholesale Market exercises a bettering influence on the processes of the market business. Arbitrary acts on the part of the market wholesale dealers toward the producers, the commission merchants, or the retailers are no more possible; and too great inequality in profits is practically excluded because the business skill and the organization of the trade work against it, particularly under the strict and constant pressure of competition.

Under the secure and well regulated conditions of the Central Wholesale Market the auction sales and also the further sales to the retailers of the city are quickly and simply accomplished. In spite of the fact that market stuffs require especially careful handling and can be dealt in only after a personal inspection of their freshness, quality, and appearance, the receipts of each day are cleared away in the few hours of the early morning; and this is done in the same way day after day. The occasional excess goes either to the cooling rooms or to the provinces, while the daily remnants go toward provisioning the city by the street trade.

With prices universally rising it cannot be determined whether any relative cheapening of fresh foodstuffs has actually taken place as a result of the establishment of the Central Wholesale Market. In Berlin in the first few years after the reorganization of its market system the price reports showed in no case a higher level, in some cases even a lower level, than obtained in the earlier open square market. It is aimed to obtain low prices, especially through the sales agencies; the payments are made as far as possible in spot cash, and the burden of excessive credit to the buyer, the effect of which is to raise prices, is disappearing more and more.

The regular official publications of the market prices obtained daily enable the authorities, as well as all others who take part in the provisioning, to study condi-

tions intelligently; in addition, it gives the distant producers constantly the opportunity to decide whether and to what extent the sale of their products in the Central Wholesale Market would be of advantage.

The Significance of the Decentralized Retail Trade for the Distribution of Foodstuffs

While the open square market of the city combines in itself the functions of receipt and distribution, the Central Wholesale Market of the large city serves only for the receipt of foodstuffs, and for their sale to the retailers. It is these who carry on the distribution of the stuffs through retail trade among the consumers. The wider the organization of the central market and the more perfect its functions the easier it is for the retail trade to supply itself with stuffs.

The free retail trade meets in every way the demands for the provisioning of the population of the big city, because it is not tied down to a few fixed trading places inside of the city, but may settle down in stores, and so count on a sure and sufficient custom trade; or it may seek opportunities for sale in the more mobile street traffic. The varied distribution of the working hours in the callings in a big city do not allow a uniform subdivision of the day for every household. In addition to this in a large city in the majority of cases the places of employment are far from the homes of the workers, and many female members of households, who have to do the buying of the necessities of life, are obliged to work to some extent for a living, either in or outside of the home. Instead of making it necessary to buy the daily foodstuffs for the household in distant market halls and retail markets, the free retail trade offers the great advantage of a retail store located near the house and very often in it, and one that can be reached quickly every day at any hour. The goods are uniformly priced and the slight increase in price resulting from the high store rents is repaid by the saving in time. For the saying "Time is money" has no better application than in the life of large city populations.

The number of retail dealers in fresh foodstuffs who occupy stores in the city is considerable, and, under the favorable influence of an increasing demand, it is constantly growing. They adjoin each other more or less closely in the several parts of the city according to the density of population; and their circles of customers overlap each other. Competition regulates the prices, and the large number and the constant addition of new competitors prevent completely and without coercion the excessive raising of prices on the part of this or that retailer. Nevertheless, the range of prices, as well as the quality of the goods offered within the entire limits of the city, varies according to the varying means of the population.

Of special significance to the distribution is the wandering street trade. The small expense, the absence of all rents, and the small price paid for the goods, which are mostly just as fresh as in the stores, enables the street trade to supply very cheaply the economically weaker strata of the population. In addition the low prices obtained in the street traffic depress those of the retail stores dealing with fresh foodstuffs, which fact cannot but be of advantage in the provisioning of the city population.

In comparison with the free retail trade business carried on in retail markets is decidedly at a disadvantage; it is clear that the city population seeks the retail markets and the market halls as long as there does not exist an adequate free retail trade, but prefers the latter unconditionally as soon as it is established. The artificial crowding together of the retail dealers who carry on the distribution is justified only, and even in this case is not always necessary, when there exists an especially dense and evenly distributed neighboring population. But a municipal retail market system can be kept up only when it is protected by the trade being forced, when

the market retail trade enjoys a monopoly, as in London, or when, in its interests, the free retail trade is kept back or is hindered in its growth, as has happened to a certain extent in Berlin with the wandering street trade for the protection of the small retail storekeeper, or as is the case universally in Leipsic. But such measures are of doubtful value to the provisioning system, because they may result in making the distribution as a whole among the large city population more difficult.

PARTICIPATION OF THE CITY ADMINISTRATION IN THE SYSTEM OF PROVISIONING

Fostering the Market Wholesale Trade

Efficiency and the necessity of the inhabitants justify, and, in fact, make it the duty of the city administration, as the representative of the people, to shape and to maintain, in the best possible manner, in the interests of the entire population the business of provisioning, because it is essential for the healthy development of the city. The administration has the sole power to organize the whole system of provisioning of the city for the general welfare. Without regard to profits and to the interests of individuals, the city administration can assume an attitude toward the state authorities, the producers, and the dealers which is based on a knowledge of the situation, and it can thus carry out an adequate system of provisioning.

Provisioning a large city is no field for experiments in communism; it requires the utmost care in its treatment and the consideration of all essential factors. Only when the system is kept strictly to its purpose, but as far as possible free in its form, can difficulties be avoided which would interfere with its efficiency instead of furthering it. Expenses which cannot be defrayed by the traffic itself need not necessarily be balked at, because the provisioning of the city population is of greater importance than the amount of the tax it may impose.

The principal demands on the city administration are made by the central wholesale market.

A connection with the net of railroads is the first requisite of a really metropolitan market. Only by this means is it possible to bring to the city effectively and rapidly the necessary daily supply of the most highly perishable foodstuffs from a widely extended field of production. Every rehandling increases the difficulty and the cost of the supply. The administration of the city should try to obtain low special rates and special facilities from the railroads, improvements in the transportation arrangements, such as the introduction of refrigerating cars, and, finally, to induce the existing local railroads to take part in the local market traffic.

The wholesale market trade is better carried on in a market hall than in an open square. The advantages of a market building, viz., isolation of the market, shelter for the dealers, the buyers, and the goods, greater order and ease of supervision, greatly facilitate the market wholesale trade, which, besides, must take place every evening under artificial illumination. Each of the several halls, which are divided off from one another for the several branches of the wholesale market, should be appropriately fitted up and made sufficiently large to accommodate, without crowding, the entire market wholesale trade within given limits, and also to offer room for its normal development. For the seasonal requirements places in fenced-off yards outside of the halls should be provided; these yards are also required to provide standing room for the wagons which bring in supplies, and still more so for those which take them away. The construction of cooling and freezing chambers requires special consideration.

Traffic in the central wholesale market must be carried on with the single idea in mind that the transfer of the fresh foodstuffs from the producer to the

consumer in and beyond the central market must take place with the greatest rapidity and with the most careful handling of the goods, because the process of provisioning a large city is at best involved and tedious.

The central wholesale market needs the guidance of a single head. The administration of a great city is generally not fitted for that purpose because it consists of two parts, the legislative and the administrative, etc.

The wholesale market trade should be permitted perfect freedom, yet it must be subject to the city administration, in order that it may work in the interest of the people of the city. By the establishment of the municipal sales agency and the official market publications, a constant and sufficiently controlling influence over the market wholesale trade is exercised. The independence of the system of provisioning the city should be maintained by making it self-sustaining as far as possible without letting it be an object of fiscal exploitation.

Furthering of the Free Retail Trade

In relation to retail distribution the inevitable conclusion to be drawn from the development in Berlin is that the city administration must not confine its care to the municipal retail market halls, but must, in the interest of provisioning the population, give its attention to the entire retail trade in fresh foodstuffs. It will facilitate thus the transformation of the market retail trade, which in the municipal halls failed, and might in a certain sense regard the city administration as responsible for this failure.

It is not so much a question of immediate interference as of a general furthering of all factors concerned in the distribution, in order to facilitate the business and the necessary decentralization.

The retail dealers in foodstuffs, especially the smaller ones, work under difficult conditions. To obtain a daily supply of fresh stuffs from the central market requires a considerable capital. As this is not always available, it has become customary for the wholesale trade to give credit to the retail trade, which naturally goes hand in hand with dependence and preference, and which, on the one hand, prevents the free formation of the provisioning system, and, on the other hand, requires the payment of high interest for the capital obtained; so that the credit trade finally throws a burden on the consumers in the form of higher prices. It is in the interest of the consumers to eliminate the giving of credit from the wholesale trade, so that it may not become a great evil; and to get together and encourage loan funds maintained coöperatively by the retail dealers, which will make it easier for them to pay spot cash for their goods.

In addition to selling the stuff the retail dealers have to travel daily in the early hours of the morning to buy their goods in the central market and to take them to their stores. The transportation of goods wastes much of their time and is very expensive because it requires the men to keep wagons on account of the great distance of many stores from the central market. This early morning traffic may be organized by the city administration, or at least aided by it, by means of market freight cars on the street railways, which are little or not at all used by passengers in the early morning hours; this would facilitate the transportation of the stuff for the retail dealers. Freight automobile trucks, on account of their greater speed, can serve the same purpose, especially for the more remote parts of the city and for the suburbs. In spite of the considerable cost such market traffic enterprises should be created by the city administration, because they enable the retail dealers in fresh foodstuffs to dispense with their own wagons.

The existing retail market halls can be made to be of service to the distributing trade in two ways: First, since they are provided with store-rooms containing

cooling chambers, they may be used as markets where the wholesale trade may carry on sales to the retail trade independently of the central wholesale market, and thus considerably shorten the length of haul. Secondly, most of them, and especially those fronting on busy streets, can be used for retail trade if stores fronting on the streets are fitted up in them. The city administration is, moreover, in a position to fix up similar rows of stores wherever possible—in buildings and on its unoccupied lots—which can be of service to the retail trade. Not having to count on profits the city administration can rent out such spaces much more cheaply than the private property owners, and by this competition can force down excessively high rents to a healthy level and thus aid the provisioning system.

The city administration and the police authorities must exercise the same supervision for the entire provisioning system as they did in the more restricted market system. A thorough inspection of all fresh foodstuffs from the time of their arrival at the central wholesale market to the time of their sale to individuals is absolutely necessary for a model provisioning system. Overcharges and dishonesty by the dealers are to be prevented and to be punished most severely, and a sanitary handling of the goods is to be insisted on unconditionally. On the other hand, the legitimate free trade is to be protected in its existence against illegitimate competition, for example, against an organized street peddling system.

In order to insure the population against an excessive increase in the retail price above the wholesale price it is necessary to publish as soon as available the daily level of prices as reported in the wholesale market reports.

THE ATTITUDE OF THE BIG CITY POPULATION TOWARD ITS PROVISIONING

Reasons for Its Passive Attitude

The initiative that a large city population can take in its provisioning is restricted in that its stores must be as conveniently located as possible, and its daily requirements in fresh foodstuffs must be supplied by the only available means; it is thus entirely dependent on the activity of the existing agencies for maintaining the food supply. But in spite of this serious situation the city consumers have, up to the present, participated only passively in the process of provisioning, without exercising a determining influence on it. The production and wholesale distribution have passed through upheavals and developments which have given the entire business a basis of world-wide extent, and even the administrations of large cities have with some success aspired to do the same in the organization of the central wholesale market; yet the way in which the people of large cities go about supplying their needs has remained almost unchanged, even though retail buying in markets has been more or less replaced by that in small retail stores.

While the producers as well as the dealers have combined in powerful associations for the preservation of their interests, the single consumer stands all by himself in relation to the provisioning system of his city.

The persistent rise of the prices of fresh foodstuffs exercises a retarding influence on the entire life of the large city. The increase in the quantity of the means of subsistence has not kept pace with the great increase in prices. Since wages and salaries have not been increased correspondingly, there has been an increasing disproportion between the things that are necessities of life and the means of getting them. The deterioration in the nourishment of the economically weaker strata, which is undoubtedly great, is shown clearly in the fact that there is a decrease in the demand for the dearer and better grades of fresh foodstuffs, and a corresponding increase in the sale of the cheaper and lower grades. To this is undoubtedly

due the high rate of infant mortality and unfitness for military duty, the percentage of which is considerably higher in the city than in the country. The fight on arbitrary price fixing can best and most effectively be carried on directly by the city consumers who are affected.

The explanation of the lack of responsibility assumed by the consumer toward the provision of his food supply lies in the fact that the life of the workers of a big city creates great differences among the people. Within limited space such a city contains the most various callings and kinds of work and the economic differences existing among the inhabitants are far more apparent than any consciousness of a common interest, which would teach them to place united action before anything else. They do not realize that they are much more dependent upon one another in the question of provisioning than their differences of individual economic rank, education, and means would indicate. On the other hand, the need of food forces the city consumers to a rather peculiarly conservative attitude. They are afraid that they will harm themselves if they dare to attack the rights of the producers and the dealers which have been fixed by custom, or if they dare to take any steps against them. And so the pressure of the dependence to which they are accustomed exercises to a certain extent a paralyzing influence on the people of the big city, who in other respects do not lack determination.

VIII. TRANSPORTATION AND ITS RELATION TO RETAIL PRICES

By Frank Andrews, Bureau of Statistics, United States Department of Agriculture

Railroad freight charges for some commodities are very small compared to the retail prices. Bread, meat, and the raw materials from which clothing is made would, in many cases, cost almost as much if the railroad and steamship companies carried them free. The average freight paid on all the grain carried on railroads in the United States is about 4 cents a bushel. At this rate the wheat necessary to make one barrel of flour is charged but 18 cents for rail transportation. The average distance grain is carried is from 220 to 225 miles, and the average of 4 cents per bushel applies to this average distance. Take a specific instance, the rate on wheat from Kansas City to Philadelphia, a distance of about 1,250 miles, is about 14.5 cents per bushel, or about 65 cents for enough wheat to make one barrel of flour. The rate on flour itself amounts to somewhat less than 50 cents per barrel; so that wheat, or flour either, can be brought all the way from the Missouri River to Philadelphia, and made into bread, and the freight charge represented by the bread would not exceed one-quarter of one cent a loaf. This freight charge is far above the usual rate; for it applies to a distance practically five times as long as the average for the United States.

Let us take an example from the live stock traffic. The average distance over which live stock is carried by rail in the United States is from two hundred and twenty-five (225) to two hundred and thirty (230) miles, and the average charge for this distance is slightly less than fourteen (14) cents per one hundred (100) pounds. Comparing this rate with the prices of meat animals it will be seen that railroad freight is not a large item. Prices for medium grades this week at principal live stock markets are about six dollars and a quarter (\$6.25) per hundred (100) pounds for sheep, seven dollars and seventy-five cents (\$7.75) for hogs, and eight dollars and a quarter (\$8.25) for beef cattle. The cost of carrying a beef steer of average weight from Chicago to Philadelphia would be about three dollars and a half (\$3.50). The beef from a steer of this size would sell at retail in New York or Philadelphia for one hundred (\$100) to one hundred and twenty-five dollars (\$125). So one dollar's worth of beef at retail would include a freight charge of about three (3) cents. If dressed beef, instead of live steers, is shipped, three (3) cents still represents approximately the freight on one dollar's worth of beef, at retail.

In regard to raw materials for clothing let us note the freight charges on cotton for the entire country. The average railroad freight on raw cotton is from ninety to ninety-five (90 to 95) cents per bale for an average distance of something over two hundred (200) miles. The wholesale market value at present prices is more than sixty-five (65) times the freight.

So much for examples of relatively low freight charges compared with prices. While freight rates on coal are much lower than on many other commodities, the coal rates constitute a relatively high percentage of the retail value. The average cost of carrying a ton of anthracite coal from one destination to another is slightly more than one dollar, the average distance being about one hundred and eighty (180) miles. This is one-sixth to one-seventh of a typical retail price.

The products just mentioned represent a large part of the supplies of the household. Meats, cereals, and clothing are not affected seriously in their retail prices by railroad freight rates. Fuel, however, as illustrated by coal, owes a large fraction of its average retail price to the cost of transportation.

The charges on fruits and vegetables over some of the longest routes may be illustrated by a few examples. Celery carried in carloads by rail from Sanford, Florida, to Philadelphia is charged at the rate of forty-seven (47) cents a box. This is for shipments of at least three hundred and fifty (350) crates carried in refrigerator cars. An additional charge of eighteen and one-half ($18\frac{1}{2}$) cents per box is made for refrigeration, making the total freight and refrigeration on a box amount to sixty-five and one-half ($65\frac{1}{2}$) cents, or possibly from one-eighth to one-quarter ($\frac{1}{8}$ to $\frac{1}{4}$) of its retail value. If the celery is shipped in ordinary ventilated cars and without refrigeration, four hundred and twenty (420) boxes are required to make a carload and the average rate from Sanford to Philadelphia is only forty-one (41) cents a box, and the freight may equal one-half to one-seventh ($\frac{1}{2}$ to $\frac{1}{7}$) of what the consumer pays. The carload rate for oranges from Jacksonville to Philadelphia amounts, for average size fruit, to about three and one-half ($3\frac{1}{2}$) cents a dozen; Florida cabbage from Jacksonville to Philadelphia is charged sixty-two (62) cents per hundred (100) pounds. The retail price of this early cabbage would be possibly five to ten (5 to 10) or more times the freight charge. Early potatoes from Jacksonville to Philadelphia are charged the carload rate of forty-seven (47) cents per one hundred (100) pounds, and the retail price would be probably ten (10) or more times this charge. One peck of these potatoes would share in the freight charge to the amount of seven (7) cents.

Let us note some rates in the central States. From Fayetteville, Arkansas, to Omaha the carload rate on peaches amounts to about twenty-five (25) cents per bushel, and the housekeeper who gets a bushel for canning purposes at one dollar and a half (\$1.50) pays six (6) times as much as the freight cost. Apples from the Ozark region in southwestern Missouri to Chicago are charged from fifty to sixty (50 to 60) cents per barrel; so that the Chicago retail purchaser pays a freight charge of from four to five (4 to 5) cents for a peck of apples.

Let me not be misunderstood. I do not intend to intimate that any price is made by starting with the cost of production and adding successively each additional cost in the distribution from producer to consumer. Rather, the price of a given commodity in a given market on a certain day is determined largely by conditions of demand and supply. A bushel of apples on which a freight charge of one dollar (\$1) is paid will sell for no more than a bushel of the same quality on which the freight charge is twenty-five (25) cents or even less. But, unless retail prices are usually above the total costs of producing and marketing there will be no regular supply. And the smaller the cost of production and of marketing the lower will be the retail price at which a commodity can be sold. One of these costs of marketing is the railroad freight charge.

We have thus far considered actual amounts paid for transportation. Freight costs have been compared with retail prices. There is another influence upon the cost of living exerted by transportation service, and this influence is highly important even though it cannot, like freight rates, be measured in dollars and cents. I refer to the present-day systems of fast freight service, which have resulted, with the aid of other agencies, in giving the average household a greater variety of fresh fruits and vegetables and for longer seasons than would have been dreamed of twenty years ago. Fruits and vegetables "out of season" have long been obtainable, but formerly the prices were too high for any but the rich. To-day many such products, even throughout the winter, are sold at prices within the reach of a medium sized pocketbook.

Good illustrations of this fact are afforded by noting in detail the sources from

which Chicago and New York obtained some of their fruits and vegetables during a recent year.

For the season of 1910 the quotations of Florida tomatoes appeared in the produce reports at Chicago early in the winter and continued to about the middle of June, when Texas tomatoes began to appear. These were followed by shipments from Mississippi, and, about the first week of July, by the produce of more northern fields. Among the States which contributed tomatoes to the Chicago trade, besides Florida, Mississippi, and Texas, were California, Tennessee, Missouri, and, of course, Illinois. New York's supply came also from a large number of States, among which were California, Florida, Texas, Mississippi, Tennessee, Virginia, North Carolina, South Carolina, New Jersey, Maryland, and Delaware, while some were imported from Cuba.

The cantaloupes used in New York City in the latter part of June and the first of July were coming from Florida, Georgia, and the Carolinas, and also from Arizona and the Imperial Valley of California. A few weeks later melons from Maryland, Delaware, Virginia, and New Jersey met, on the same market, those from New Mexico, Nevada, and Colorado.

The sources of supply in a given market are governed to some degree by changing conditions of trade. For instance, when the Arkansas peach crop is small Georgia may be shipping to points as far west as Denver, while, if the Arkansas yield is large, Georgia peaches might get into few markets west of Chicago.

If we walk along Dock Street in this city and note the packages of produce in front of the commission houses, we may see barrels of apples bearing the name of some shipping point in northwestern New York, or the Shenandoah Valley; and nearby will be boxed apples labeled possibly by some fruit company of the Sacramento Valley, or a Colorado growers' association, or bearing the large red "Y" of the Yakima district, in the Pacific Northwest.

Illustrations are plentiful of this wide-reaching system of transportation through which the needs of a home are supplied. Crop failure has less influence on supply than formerly; for failure is usually confined to, at most, only a few localities, and the total supply of the country may be thus reduced, but not cut off entirely.

The producer as well as the consumer is affected by this transportation system. It has opened to him a large number of markets, to any one of which he may deliver promptly a carload of fresh fruits or vegetables and sell them usually at a fair price.

An inquiry was made a year or so ago as to the number of cities in which various fruits and vegetables were received in carload lots for local use. The inquiry was limited to cities having a population of at least twenty-five thousand (25,000). Of the one hundred and three (103) cities from which replies were obtained, peaches were sold by the carload in at least eighty-seven (87); watermelons, in eighty-six (86); cantaloupes, seventy-seven (77); bananas, seventy-two (72); strawberries, seventy-one (71); tomatoes, sixty-six (66); oranges, sixty-five (65); grapes, fifty-three (53); lemons, thirty-nine (39); pears, thirty-two (32); pineapples, twenty-eight (28); plums, twenty-four (24); celery, eighteen (18); cherries, thirteen (13); cucumbers, eleven (11); green beans, eleven (11); apricots, eleven (11); and each of about twenty-five (25) other commodities of this class had car-load markets in from one, to ten (1 to 10) different cities.

The number of car-load markets for fruits and vegetables has increased greatly during the past decade: there are at least forty (40) per cent. more now than ten years ago.

Now as to transport service. The freight carried on many railroads is divided into classes based upon the kind of service rendered. The highest class of goods is given the quickest and most regular service. A second class of goods, and even a

third, or a fourth, may also be moved in trains having regular times for arrival and departure, but which are slower than the so-called "manifest," "red ball," or "vegetable express" trains.

Fresh fruits and vegetables are usually included in the list of commodities which are given this best service. Trains carrying these perishable products are run at greater rates of speed and with greater regularity than are ordinary freight trains.

One feature of this service is the telegraphic report which is made of each car as it passes each reporting station on its route. These passing reports are used by shippers and consignees to trace the movement of a car in transit; and to change the destination, in case better prices are offered in another market. For instance, suppose a dealer in Chicago, on a Thursday morning, wishes to know the location of a carload of tomatoes which were shipped to him the morning before from Crystal Springs, Mississippi. He telephones to the railroad company's agent in Chicago and learns that his car will reach Cairo, Illinois, at 8.30 A. M., or, let it be assumed, about an hour after the time the dealer makes inquiry. With this information he knows that if he desires to divert the car he may select one of a number of markets located north of the Ohio River. He compares telegrams he has received from various places and decides that, of the markets within reach, Indianapolis promises the best prices for tomatoes on the following day, when his car is due in Chicago. So he orders the car to be diverted to Indianapolis. He may wait until 3 P. M. Thursday before making this decision. The order for diversion is sent from Chicago to the proper official at Effingham, Illinois, where the car is due to arrive about 5.45 P. M., and where transfers are regularly made for Indianapolis. It reaches that city early Friday morning, about the time it would have reached Chicago, had there been no diversion.

The average rate of speed over long distances for carloads of perishable freight depends largely upon the character of the roadbed and the number of transfers from one railroad to another. From Los Angeles to Chicago and from Jacksonville, Florida, to Chicago, the rate averages about thirteen (13) miles an hour, including all stops. From New Orleans to Chicago, the average rate of one of these "manifest" trains is sixteen (16) miles per hour—about the same as the average rate of a so-called "vegetable express" freight train running from Tampa, Florida, to Richmond, Virginia.

While these fast freight trains, as any others, may be late sometimes, nevertheless their regularity is such that transactions are reported to be made often, if not usually, with the expectation that the produce involved will be delivered at about a certain time on a certain day.

This special freight service, together with better methods of marketing and the increased use of refrigeration, has helped to increase greatly our food supply, and has no doubt reduced greatly the waste connected with marketing of perishable produce.

The consumer is often interested in a plan to buy direct from the producer. To do this economically the commodities must usually be carried in car-lots unless they are brought for short distances.

The time taken in transferring a package from one car to another at various points on a long route may add considerably to the time of transit; and the freight rate on the less-than-carload lot is regularly higher than for the carload. Sometimes this difference is not great enough to affect materially the retail price, and, again, the difference in rate practically prohibits less-than-car-lot shipments.

As a rule, for many commodities carload lots can be handled only through regular wholesale merchants, farmers' coöperative associations, or possibly by large associations of consumers. In the latter case the consumers' association would have to employ a manager with an office force and a delivery system.

It is the small consignment from a nearby point that the consumer may usually

buy direct from the producer. The kind of article purchased and the distance brought depends largely upon the relation of the retail value to the freight charge. Eggs, for instance, will bear a much higher transportation charge than will potatoes.

At present wholesale prices in Philadelphia a case of eggs is worth about twelve (12) times as much as a sack of potatoes. Both packages are about the same size.

Such farm products as eggs, dressed poultry, butter, and, when prices are high, some fruits and vegetables, are especially adapted to transportation in small lots, and may be readily sent direct from farmer to consumer. If, however, a mixed lot of articles is included in one package, the higher priced articles may offset those of low price to such a degree that the total value of the package will not be too low to justify the charge for transportation. This principle is illustrated in the "home hamper" system, inaugurated by the Long Island R. R. Company some years ago. Each hamper is packed by the producer with a variety of farm produce and is shipped direct to a city consumer. This seems to be an effective way to overcome the difficulty of caring for wholesale quantities in a home, where storage facilities are limited, to say the least. A hamper of one kind of vegetable might be more than a family could use at one time or could keep to advantage; but, if the basket were filled with a variety of articles, the quantity could be used easily. Under this "home hamper" system the freight charge on the single package is apparently low enough to yield a satisfactory return to the seller without making the consumer pay too much. One of the strong points in favor of this system is the freshness of the produce when it reaches the consumer.

Another example of transporting retail packages from producer to consumer is the attempt recently made by a farmers' cooperative association near Rochester, New York. This association advertised one season to sell apples at two dollars and a quarter (\$2.25) a bushel box, delivered to consumer. After a trial it was found that wagon delivery in the City of Rochester was costing the association at the rate of thirty-six (36) cents a box. Then a contract was made with a department store, by which the store agreed to sell the apples at the old price of two dollars and twenty-five cents (\$2.25) a box delivered to consumers; and to pay the association two dollars (\$2.00) per box. Here, by the way, is a transportation cost which enters largely into retail prices—the cost of hauling by wagon.

Under the present parcel post system articles having a price relatively high compared with their weight are afforded quick and relatively cheap transportation. A package containing three (3) dozen eggs, if the gross weight is four (4) pounds, can be sent one hundred and fifty (150) miles at an average cost of six (6) cents per dozen. The increase in prices during the past twenty years has not been due to changes in freight charges, and certainly not to any loss of efficiency in freight service. The tendency has been in the opposite direction; the common carrier's influence has been generally against an increase in the cost of living. One of the problems of to-day is to make this influence greater, to make use of transportation to reduce the cost of living; and one of the leading phases of this problem is to develop still further an efficient and economical system for carrying packages of retail size direct from producer to consumer.

IX. WATERWAYS AND COST OF LIVING

By S. A. Thompson, Secretary and Treasurer, National Rivers and Harbors Congress

The high cost of living and how to reduce it is probably causing more thought and discussion than almost any other subject that can be named. It is not at all confined to the United States, but is a pressing problem almost throughout the civilized world. So widespread an effect is not produced by a single cause and the trouble can be completely cured by no single remedy. The influence of the increased production of gold, the growth of cities at the expense of rural population, etc., must be left for discussion by others; it is intended here only to suggest the importance of reducing transportation charges to the lowest possible point and the great benefits which may be realized from the largest possible utilization of transportation by water.

In Germany the Imperial Government has reduced the duty in certain cases and the Bavarian railways have reduced the freight rate on meat by 20 per cent. and on imported live animals by 30 per cent. The same consular report which mentions these reductions states that the Bavarian Parliament has appropriated \$714,000 as a first installment for extending the navigable channel of the River Main from Frankfort up to Aschaffenberg. In Germany the railroads are owned by the states and rates can be fixed to meet the necessities of the people.

Little can be hoped for from reduction of railroad rates in this country. Indeed, elaborate and voluminous arguments have recently been submitted to the Interstate Commerce Commission in favor of a 5 per cent. increase in the rates on all commodities between New York and Chicago, which would automatically increase the rates over a large part of the country. But, if we cannot follow the example of Germany in reducing railway freight rates, we can, and should, follow her example in the improvement and utilization of our waterways and harbors.

The City of New York has an extraordinarily favorable situation in relation to transportation by water. It is located upon one of the finest harbors in the world; it has connection, through the Erie Canal, with the Great Lakes—a connection which is soon to be made vastly more efficient through the completion of the new Barge Canal; Long Island Sound is practically a great inland waterway giving access to a territory in which there are large opportunities for further development; it is a simple matter, so far at least as engineering difficulties are concerned, to complete a protected inland waterway from New York to the southern extremity of Florida; and it is entirely possible, by the construction of canals from the Great Lakes to the Ohio and Mississippi Rivers and another across the State of Florida, to connect the harbor of New York with all the navigable waterways of the United States east of the Rocky Mountains.

In so far as the projects here outlined are not already provided for, either by the State or the Federal Government, the people of New York should use all the influence at their command to hasten the completion of them all. It has been demonstrated over and over again that waterways are creators of prosperity and such a connected system of inland waterways as has been outlined would not only decrease the cost of living, by furnishing the cheapest possible transportation

for a large proportion of all the articles which are used in the daily life of the people, but also, by increasing the supply of raw materials for manufacture and enlarging the area within which finished products can be marketed, would so develop industry and commerce that a greatly increased number of people would have the funds with which to meet the cost of living, whether that be high or low.

The experts of the Agricultural Department estimate the cost of transporting a ton of freight a distance of one mile by horse and wagon on the average road in the United States at 23 cents. In England, where the roads are much better than most of those in this country, and where much attention has been given to the development of what the English call a "steam lorry," and what we would call a steam truck, it is said that goods can be carried for five cents per ton per mile. The average rate on all the railroads in the United States during the past few years has been about $7\frac{1}{2}$ mills per ton per mile, but on a certain special group of roads the average has been about 5 mills.

On the Erie Canal in recent years the ton mile rate has been about 2 mills, while on certain canals in Europe which are deeper and wider and on which electric or other mechanical systems of haulage are used the rate is 2 mills.

Suppose you have a ton of freight to ship and a dollar to spend in shipping it, how far will the dollar carry the ton by these different methods and these different rates of transportation?

By horse and wagon a little over 4 miles; by English steam truck, 20 miles; by rail, at the average rate for United States railways, 133 miles; at the rate on the group of selected railways, 200 miles; on the Erie Canal, 333 miles; on the European canals, 500 miles; by lake at the average rate through the Soo Canal in 1911, 1,500 miles; while at the rate at which coal is carried both on the Great Lakes and on the Ohio and Mississippi Rivers, the ton of freight can be shipped 30 miles for a cent, 300 miles for a dime, and 3,000 miles for a dollar.

It must be apparent from what has already been said that waterways furnish the cheapest possible transportation. Let me clinch that fact with a specific illustration. Through the Soo Canals at the outlet of Lake Superior there were carried last year 72,479,676 tons of freight. This was carried an average distance of about 830 miles and at an average charge of about two-thirds of one mill per ton per mile. If this vast amount of freight had been sent the same distance by rail at the average charge for railway transportation it would have cost \$411,000,000 more than was actually paid for its carriage by water.

As a large portion of this lake traffic consisted of ore, coal, and other raw materials, the comparison with the average rail rate may not be strictly accurate, because the latter may carry a larger proportion of high class commodities, but, if we cut the amount in two, the saving on the business of Lake Superior alone for a single year amounts to \$205,500,000. As the entire expenditure on all the lakes amounts to only about \$11,000,000, it must be admitted that the saving effected constitutes a very satisfactory dividend upon that expenditure.

The experience in Frankfort, in Germany, furnishes a striking example of the benefits of water transportation. So far as any real practical use was concerned the River Main, before its improvement, was hardly entitled to be called navigable at all. As soon as a dependable channel became available traffic began to grow by leaps and bounds. The first locks were made to accommodate boats 280 feet long, 35 feet wide and with a draft of 8 feet. The engineers who planned the improvement thought that they had made ample provision for all the traffic which would be developed for many years, but in less than three years after they were finished a demand arose for their enlargement. Between 1891 and 1895 the locks were rebuilt and given a usable length of 1,150 feet, which is 150 feet more than the

locks on the Panama Canal have. This great length allows trains of four or five boats to be locked through at one operation and without recoupling.

The German Government knows that a waterway without proper terminal facilities is just about as useless as a railway would be under the same conditions. So, when the Government agreed to build the channel, Frankfort had to agree to build a harbor. The first harbor built by Frankfort provided moorings and anchorage for 50 or 60 Rhine boats of the largest class and was equipped with warehouses, sheds, railway tracks, elevators, hydraulic cranes and other modern appliances for handling freight, and cost \$1,582,750. The traffic on the river, which in 1887 was only 396,000 metric tons (metric ton equals 2,204.6 pounds), had risen to 1,431,000 tons in 1896, and to 2,552,000 tons in 1905. One of the best indications of the growth of traffic which has already occurred and the further growth which is anticipated is given by the fact that the city of Frankfort, which is not a seaport but is 500 miles from the ocean on a small tributary of the Rhine, is now engaged in building a new and greater harbor at a cost of \$17,600,000.

The full measure of the results produced by the improvement of the river is not shown unless we also consider its effect upon the traffic of the railways. There are still some short-sighted railway men in the United States who are afraid that the improvement of American waterways will work harm to American railways. Nothing of the kind happened at Frankfort, for the rail traffic, which was 932,090 metric tons in 1886, rose to 1,639,229 tons in 1896, and to 2,770,000 tons in 1910, which is almost three times as much as it was when the railways had a practical monopoly of the business of Frankfort.

Nor is that the whole story; it is only the beginning; for the traffic has not only been multiplied in quantity, but equalized in direction. Formerly Frankfort had little to sell and almost everything to buy. Cars and boats both came in loaded and went back empty. Now they go loaded in both directions, and the traffic, being more symmetrical, is more economical and profitable.

Still further, and most important of all, the traffic was not only trebled in quantity and equalized in direction, but was raised in grade. Dr. Leo Sympher, chief engineer of canals and waterways of Prussia, states that since the canalized river was opened there has never been a year when the railways of Frankfort had any less traffic than they had before. The traffic that the river took away was mostly coal, while the greater part of the nearly 2,000,000 tons of the traffic increase between 1887 and 1910 is composed of high-grade commodities manufactured from the raw materials brought in by the river, and of goods handled at special rates by the fast freight service which takes the place of express service in this country. Both classes of traffic command much higher rates and are much more profitable to handle than coal.

Besides all else there is a tremendous increase in passenger traffic, which the railroads have derived from the development of vast industries and the growth of an active, concentrated, prosperous population which has resulted therefrom. An excellent indication of the benefits which have accrued to the railways is found in the fact that, a few years after the river was improved and in consequence of the growth it produced, the Prussian Railway Administration found it desirable to build a combined passenger and freight station at a cost of \$10,000,000. Even that was outgrown and additions have recently been made at an expense of more than \$1,000,000. Over 500 trains daily enter and leave this splendid station, which would do credit to an American city of twice the size of Frankfort.

Recent legislation is designed to secure constructive cooperation rather than destructive competition between railways and waterways, and, since New York is the metropolis of the nation, the improvement of waterways in any part of the United States, and the prosperity which will result therefrom, are direct benefits to the

City of New York and to its people. It is to their own interest, therefore, to throw all their influence, as has already been urged, in favor of the most complete and rapid development of the waterways and harbors of the United States that can be brought about. This is a great work, however, and will necessarily take considerable time. There are some other measures which will be of more direct and immediate benefit.

The fundamental reason why the waterways of Germany have proved of such immense advantage to that progressive country lies in the fact that these waterways are provided with ample and adequately equipped terminals. It is a question for the proper authorities of the City of New York to consider whether the terminals which are to be provided by the State in connection with the Barge Canal will meet all the needs of the city, or whether additional terminals should be provided by the city itself. But as a measure which can be carried out within a short time and at a moderate cost, and which will have a direct effect upon the high cost of living, so far as foodstuffs are concerned, I beg to suggest the provision of a dock, or a number of docks in different parts of the city, which shall be reserved solely for the use of farmers and gardeners who bring their own produce to market in their own boats, whether the power used be motors, sails, or even oars. The efficiency of such a dock would, of course, be greatly increased by the addition of a market house, or at least a market space, immediately adjoining. Such a dock in Jacksonville, Florida, is crowded to the limit every day, and it is probable that several such docks in the City of New York would also be fully utilized by farmers and gardeners from points on the Hudson River, Long Island Sound, and other waterways in the vicinity of the city.

Looking a little farther ahead, when the inland waterway along the Atlantic Coast is completed, early vegetables can be brought by water from southern points, and, if refrigerator ships can carry meats in good condition from Australia to London, or to San Francisco, there is no reason why perishable goods may not be brought in refrigerator barges from points on the Great Lakes or from Georgia and Florida.

Costly transportation is not the only reason for the high cost of living, but it is certainly one of the principal reasons. One of the most efficient methods of reducing living costs is, therefore, the reduction of transportation costs. Since the cheapest of all transportation is water transportation, it follows that the reduction of the cost of living for the people of New York will be greatly aided by improving the waterways of the country generally and joining them into a connected system; by the further improvement of the harbor of New York and the waterways connected therewith; by the provision of ample and adequately equipped terminals; and by the setting apart of a dock, or docks, for the use of farmers and gardeners who may bring their products to the city in boats, such docks to be supplemented by municipal market facilities which will enable the producer to deal directly with the consumer without the intervention of a middleman.

X. TROLLEY FREIGHT—A PROMISING AGENCY FOR LOCAL DISTRIBUTION

By Clyde Lyndon King, Ph.D., Wharton School, University of Pennsylvania

To all interested in our local and interstate transportation systems, it is becoming increasingly apparent that trolley freight is to play an ever-larger part in developing local agricultural communities and in distributing farm produce to needy urban sections.

The features of trolley freight that make its possibilities loom up so large are:

1. Frequent stops at small outlay, thus reducing the cost of the farmer's haul to station.

2. Tapping regions inadequately served by other carriers, thus placing many farmers several hours nearer the city's markets.

3. The ability to ship in smaller quantities than do the railroads (which are essentially carload-lot and wholesale distributors), thus giving a new avenue for marketing the surplus of small farmers and focusing attention upon the nature of the output of all farmers.

4. Farmers can market their goods in a fresher condition, thus giving the consumer better goods and the farmer better prices.

5. It reaches sections of the city not reached by railroad terminals, thus making possible the distribution of food products to the needier sections of the large city and exactly to the market center in the small city.

6. It increases the facilities for getting the output of manufacturing establishments to railroad stations, and from the city to outlying suburbs and farmers, thereby enhancing both urban and farm values.

7. It pays.

The significance and the far reaching importance of the development of this relatively new means of transportation can best be brought out by getting a vision of existing facilities for marketing food stuffs and by noticing the effect of these facilities on land values and on consumers' prices.

How Prices Are Made.—In getting at this question the first factor that must be clearly kept in mind is that the prevailing prices on all farm produce are fixed by nation-wide and, indeed, by international forces. So far as wholesale prices are concerned, that is, the Pennsylvania farmer or the Massachusetts farmer is competing not only with the farmers in each and every one of the other coastal States, but with the farmers of the newer and richer regions in the Mississippi Valley and the far west, and, indeed, with the farmers in Argentine, in South Africa, in Europe, in Asia, and in all parts of the world. The place that the local farmer, East or West, can take in shaping national and international prices for farm produce is indeed very small.

The forces by which prices on farm products are kept practically uniform throughout the United States and the commercial world are practically fourfold: first, the practice known as diversion of shipments; second, the comparatively low cost of transcontinental and of oceanic transportation; third, the use of cold storage; and, fourth, the methods used in arriving at market quotations on farm products.

The receipts from railway freight transportation in the year 1910 alone totaled \$1,418,000,000. This grand total is due, not to the fact that the rate of transportation on any given product is relatively high (for a bushel of wheat may be sent from Chicago to New York by lake or by canal for a little over five cents, and by all-rail for but a fraction over nine cents) but to the immense amount of business handled. This development of intra-state, interstate, and transcontinental freight has placed the Kansas or Colorado farmer much nearer to Philadelphia than the farmers around Harrisburg were a quarter of a century ago, and much nearer to New York than the farmers on Long Island were a decade ago.

The advantages that might otherwise accrue to the local farmer when there was an increased local demand or when there was a shortage of supply in the neighboring farms is overcome by the facility with which farm products from any section of the country may be sent even *after transit has started* to a point offering a more favorable market. This method is called diversion of shipment or selling in transit. If a car of cattle, for instance, is consigned from a Kansas shipping point to Chicago, it may, by telegram, be unloaded and placed on sale at Kansas City or at Omaha, should prices at either of those places indicate greater returns than the probable price upon arrival at Chicago. Grain billed through from the Nebraska or Minnesota farm to points in the East may, by telegram, be diverted, on almost any day, to any other point in the United States.

Selling in Transit Methods.—The selling in transit plan is used in shipping fruit by rail from California or other Southern or Southwestern points. Two of the diversion points most frequently used are Council Bluffs, Iowa, and a point known as Minnesota Transfer, a freight yard between St. Paul and Minneapolis. A car of fruit and vegetables en route from a Southern state may be sent, on order, to Potomac Yard, a freight transfer point on the Potomac River, opposite Washington, D. C., or to some other diversion point. At each of these diversion points, a representative of the commission firm, be the firm a New York, a Chicago, or a Pittsburg firm, opens the cars, inspects the contents, and reports the results by telegraph or telephone to his commission firm which, in the mean time, is keeping itself well informed of market conditions in all of the different cities of the United States. The agent at the diversion point then receives orders as to the final destination of the car. Should prices be higher for any reason in Boston, New York, Philadelphia, New Orleans, or San Francisco, the car would be directed to that point in lieu of going to a point where the local prices were not so high. That is, in the days of the telegram the Eastern farmer, because of his location near the larger cities or because of a local stringency in supply, would have little advantage over the Kansas farmer, so far as the wholesale price is concerned. The same thing is true of any local farmer anywhere.

A second factor in fixing a nation-wide price on farm produce is the relatively small cost of interstate transportation and the frequent high cost of local transportation. It costs the United States \$75,000,000 annually to haul its produce for twelve main crops from farm to shipping point or market. The average cost of hauling a ton of farm produce per mile is from 25 cents up. That is, if the farmer has to haul a great distance, his transportation charges will readily amount to more than the total transportation costs on products of the Kansas or Iowa farm when sold in New York. The average cost of hauling produce from farms to shipping points in the United States as a whole ranges from 7 to 44 cents per one hundred pounds, with an average of 11 cents. The mean rate on grain, flour, and provisions in cents per one hundred points, through from Chicago to Liverpool by all rail to seaboard, and thence by steamer, is 19 cents per one hundred pounds, and, if brought by lake and canal to the seaboard and thence to Liverpool by steamer, the rate is not far from 15 cents per one hundred pounds. That is, it costs but 4 cents per one hundred

pounds more to get farm produce from Chicago to Liverpool than it does to get it from the farm to the shipping point. In other words, in fixing nationwide market quotations on farm produce, the disadvantage of the Western farmer because of his distance from the market is slight indeed so far as transportation from a shipping point to market is concerned. The only advantage that the Eastern farmer can secure over his Western competitor, therefore, is in decreasing his cost of hauling to the shipping point and the cost from there to the market and in more skillfully sorting and otherwise adapting his output to peculiar local needs. The position and output of the Western, Southern, or Northern farmer are also deeply affected and he, too, must readjust his output and marketing habits.

The Effect of Cold Storage.—The third factor in making for a nation-wide wholesale price on farm produce is cold storage. The butter produced in June and July is held for sale during January and February. Eggs laid during the early spring months are held for sale during the winter months of the year following. This makes for stability of price, not only for one locality as compared with another, but for one season as compared with another, and hence again the advantage of the farmer because of his location near a large city or other marketing avenue is counterbalanced by the greater fertility and productiveness in other regions, or by greater alertness elsewhere in scientific farming or horticulture. Eggs can, under proper refrigeration, be brought from a farm six days distant by fast freight to a city in better condition than the eggs brought in on a warm day from a farm six to ten miles from the city.

The fourth factor making for fluidity and acceleration, and thus for nation-wide stability in market prices on farm products, is the method by which crop reports are issued. It is upon the basis of these reports that the produce exchanges in the primary markets of the United States and the world base their prices, both on current productions and on futures. Information as to crop conditions is secured by the Bureau of Statistics of the United States Department of Agriculture—the most highly organized crop reporting department of the world. The Bureau secures at least four classes of reports as to acreage, conditions, etc., of each crop. These reports are by state agents, by special traveling agents, by county and by township correspondents. From these four classes of reports, the crop reporting board arrives at state averages and totals, and national averages and totals, as to crop conditions, including the leading facts as to acreage and condition of each crop in each and every locality. At a stated hour, this report is sent world-wide by telegraph and telephone. The primary markets, such as New York, Chicago, and New Orleans, use these reports as a basis for market prices. To these facilities is now being added an international crop reporting agency. Each of the great produce exchange concerns has also its own crop reporting agents at work not only in this country but in all other countries as well. Thus prices of farm products are based on crop conditions, not only in every section of the United States, but in every section of the world as well. And, again, the influence of local production on fixing prices is relatively small.

Increase in Farm Values.—By these four forces the wholesale price is fixed with a degree of rigidity over which the farmer of any locality has relatively little control. It is these forces that have caused such startlingly increased land values in the Southern and Western states. Thus in the twenty years from 1890 to 1910 farm values in Iowa increased \$2,600,000,000 as compared with a \$200,000,000 increase in Pennsylvania. Southern farms, orchards, and produce sections are now obtaining increasing values because their output can reach the earliest, and therefore highest priced, markets.

If land values in the Eastern states are to be restored and land values in Western states maintained, there must be a revolution in local transportation and in facilities

for marketing local produce comparable to this revolution in interstate transportation facilities.

The leading agency for making this change in local conditions is the extended use of trolley freight, and that because of the peculiar features as outlined in the opening paragraphs of this paper. These advantages are: (1) lower transportation costs from farm to shipping point because of the many new shipping points; (2) quicker and better distributing facilities from shipping point to city; (3) better and cheaper distribution within the city.

The use of trolleys in getting farm produce to markets has been developed more generally in the middle West and in the far West than it has as yet in the Eastern states, despite the fact that the Eastern states have greater mileage in interurban trolley lines.

The use to which trolley lines may be put as freight carriers may be classified as: 1. Carrying farm produce to market, and miscellaneous manufactures and merchandise to the country; 2. Carrying carload lots as feeders of the steam railroads; 3. Delivering parcels and lighter packages into and out of the large cities; 4. Acting as a means of urban distribution.

The farm produce carried to market includes milk, butter, eggs, fruit, poultry, livestock, and all farm products. Examples of the use to which this means of trolley transportation can be put are found in the practices of certain Middle Western trolley companies and in the freight and express service in Boston.

What's Done in Indianapolis.—Centering in Indianapolis are eleven electric express and trolley lines, bringing in upward of 15,000 tons of freight per month, the major portion being foodstuffs. The city secures over 75 per cent. of its market supplies over trolley lines. A long distance telephone message at five in the morning brings fruit and vegetables from a radius of fifty miles. The result is a splendidly developed agricultural section, and a better development in the manufacturing and commercial possibilities of Indianapolis and a lower food cost to the Indianapolis consumer. South Bend and Fort Wayne, Indiana; St. Louis, Missouri; cities in southern Illinois; Chicago; Columbus, Dayton, Toledo, Cincinnati, and Cleveland, in Ohio, are other cities already profiting by such traffic. In many of these cities are open municipal markets with the trolley lines running directly to them so that farmers may receive retail prices for their goods.

There are about three thousand miles of street railway track in Massachusetts, and the greater portion of this mileage is within fifty miles of Boston. A definite effort is now being made by the Bay State Street Railway Company to develop its incoming and outgoing freight by bringing into the city boot and shoe findings, as well as farm products of all kinds, and to take out to the farm department-store packages, hardware, meats, paper, vegetables, and fruits from other lands and all commodities manufactured in the vicinity. This company now has in use seventeen express and freight cars with a capacity of twenty tons each, heated by electric heaters to protect perishable goods in cold weather, with open bulkheads for cooling purposes in warm weather. The vestibules are so arranged that the windows can be lowered and thus by air circulation prevent deterioration of goods in transit. During the warm months the cars stop and pick up the produce along each of the suburban lines throughout the country districts. This saves the farmer even the haul to a railway station. More important still, it gives him a mobile and efficient method of getting his produce to just the point in Boston where he can dispose of it with greatest profit. The express rates charged are 22 1-3 per cent. lower than those charged by the old line express companies, while the freight rates average but from one to three cents per hundred in excess of steam rates.

The Metropolitan Division of the Toronto and York Radial Railway Company

has special schedules whereby shipments are made direct from farm to municipal markets in four of the towns served by the company.

These are but examples of what can be done in the way of getting produce directly from the farm to the city, and, of greater importance still, directly to the section of the city where needed. This will mean a very great advantage to the local farmer, an advantage that cannot but result, if fully developed, in higher land values and greater returns to the farmer, and ultimately in lower prices and better foodstuffs for the consumer.

Feeding the Steam Roads.—The second class of freight handled by trolley lines is the hauling of heavy freight by the carload as feeders of the steam railroads and as a means of getting produce in carload lots direct to the retailer.

On the lines of the Illinois Traction system there are seven coal companies depending wholly upon that system for an outlet. These lines during the winter months carry an average of 1,000 cars of coal monthly. The Grand Rapids, Grand Haven, and Muskegon Railroad is hauling beer in carload lots, saving the brewery people all the cost of icing because the trolley line can get the beer to destination two hours after loading. They handle two cars a week in hot weather. In winter, they get the same company's business because they can get the beer to destination before it can freeze.

Manufacturing plants along the line of the Bay State Street Railway Company are asking for the construction of sidings so as to do away with long and expensive hauls to steam road stations.

The Metropolitan Division of the Toronto and York Radial Railway has encouraged farmers to build grain elevators and ship both grain and hay by carload lots. They also handle the business of Yawman & Erbe, office furniture manufacturing company, from the rough lumber to the finished product.

An example of the use to which trolley freight has been put in the delivering of parcels and lighter packages into and out of the large cities is found in the class of service offered by the Ohio Electric Company. The merchants' freight service of this company is handled on passenger cars, equipped with baggage compartments. The rates are little higher than those for freight handled on the regular trolley freight car. The commodities offered for transportation in this way consist largely of ice cream, fruits, bread, and merchandise. The trolley lines centering in Philadelphia also do a business of this character.

Intra-urban Freight.—The fourth use to which trolley freight can be put is the handling of freight within the city. This is still in its infancy, as the trolley lines in many of our larger cities have heretofore been prohibited from doing a freight business, as the companies themselves have not paid special attention to the development of such traffic. The business of the Bay State Street Railway Company increased 165 per cent. for the month of November, 1912, over that of November, 1911, an increase to be explained almost entirely by the fact that the terminal facilities within the city were very greatly developed and the company was no longer obliged to make a transfer of goods from car to car or from car to automobile truck.

The possibilities for the increase in the use of trolley freight in Pennsylvania are unlimited. The state ranks second in track mileage among all the states in the Union, having 4,343 miles, and stands second also in regard to the amount of invested capital. One-tenth of the street railway mileage in the United States, and about one-tenth of the capital stock invested in street railways, lie in Pennsylvania. Not all of this, to be sure, is in the outlying sections, but so large a portion of it is that its significance as a means of distributing farmers' products is very great indeed, especially when it is coupled with the possibility of unlimited freight distribution within the city, thus placing the farmers' products exactly where they are needed and where the best prices can be obtained.

The movement to extend its use is now well under way. Thus the Pittsburgh and

Butler Street Railway Company inaugurated their freight business only after long consideration and then primarily to accommodate many patrons along their lines, the directors still believing that the business would be neither practicable nor profitable. But larger facilities and frequent schedules were soon demanded. Last year the business in and out of Pittsburgh totaled 100,000,000 pounds. There is at present increased interest in such business on the lines in and centering in Philadelphia. The Lehigh Valley Transit Company has long been especially active in such traffic.

The development of trolley freight as a means of retail distribution would, first of all, add to the receipts of trolley companies. Where given a fair trial, under competent management, trolley freight has proved profitable.

The development of trolley freight, moreover, would place the farmer many hours nearer the city with the consequent change in the character of his output. Our farmers in all sections are not adapting their output to local markets. They are all too largely producing for the wholesale market, while higher returns to farmers necessitate greater adaptation to local markets and an extended use of direct marketing. The consumer, in his desire to get better food at lower prices, the manufacturer, in his desire to get an outlet for his products, and the city that would be located in a wholesome agricultural environment, must all look toward an increased use of direct marketing and of selling at home. Trolley freight makes for just this kind of development.

Use as a Time Saver.—The development of such transportation facilities will save time to farmers. For instance, now the outlying farmer fifteen or twenty miles from Philadelphia will take a day to drive to the Philadelphia market, a day to sell his products, and a day to get home. Thus half his week is gone. With trolley freight he could load his goods on a trolley car at six in the evening, take an early train to the city the next morning, sell direct to the consumers en route or at the market, and be back home in the early afternoon, using but half a day instead of three, and keeping his invested capital at home at productive work. The farm's output would consequently be increased, and the farmer's purchasing power would be enlarged.

The development of trolley freight in many sections would mean that the gates in each and every farm would then not only swing outward to send an increasing volume of products to the city consumer, but they would also swing inward to allow the entrance of goods made or sold in the nearby city. The result would be a closer interweaving of the agricultural, economic, and social interests of country and city to the end that confidence would supplant distrust and coöperation, indifference; thus both the city's position as an urban center and the value of the outlying farms would be greatly enhanced.

Attention must be focused more and more on agencies for efficient, economic, retail distribution.

No one would contend that adequate results will accrue from developing transportation facilities before there is produce to transport. Neither would anyone contend that it would be sane to raise farm produce for sale until there is at hand means for transporting it to market. Production and transportation mutually react to the advantage of both. Each must wait upon the other. Our railway history is replete with illustrations to show the transforming effect that new and better transportation agencies have on the character and output of the farm.

Trolley freight is one of the newer agencies which may usher in a new era, characterized by adaptation of transportation and of farm output to local markets and local conditions.

XI. REFRIGERATION AT THE MARKET CENTER

BY M. E. PENNINGTON

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The application of refrigeration to foodstuffs is, primarily, for conservation. The agents of decay, notably, bacteria and enzymes, are hindered in their work of destruction by low temperatures. The freezing of certain commodities so retards chemical and bacterial changes that they are inappreciable. In other commodities the changes are not prevented, but they progress very slowly. Sometimes, as in the case of fruit and eggs, freezing would injure the article; then suitable temperatures above freezing are applied. Ordinarily, deteriorative changes progress more rapidly when "chilling" rather than "freezing" is resorted to, but, even so, we are enabled to preserve many articles from season to season which could not otherwise be saved for the use of the people by holding them at, or near, 32° F.

In addition to the conservation for longer or shorter periods of foods prepared for market there is a great and vitally important field for refrigeration in their preparation and transportation to market.

The rapid growth of the population of this country; its unparalleled segregation in large cities; the increasing distance between producer and consumer, all tend to render more and more important the question of the handling, transportation, and storage of perishable products. The providing of an adequate, good quality food supply in our large cities is one of the most difficult problems of the century. It cannot be treated intelligently from the viewpoint of the city's distributing systems alone. The city's equipment and routine are the last links in a long chain involving many agencies, a great variety of knowledge, and a vast mechanical equipment.

In order to determine the relative importance of refrigeration at the market center one must have some knowledge of the extent to which it is used in the handling of perishables during their preparation for and transportation to market.

Consider our common fruits, for example, many of which are now staples throughout the year. Bananas are shipped in vessels in which the temperature can be carefully regulated. At the great banana ports, such as New Orleans, they are loaded into refrigerated cars and distributed to every part of the country. The citrus fruits of California have the orchard heat removed by a sojourn of a day or two in a mechanically refrigerated chill-room, then travel in safety across the continent in refrigerated carriers. Or, the carrier, with more frequent supplies of ice, chills the fruit in transit. Under such conditions the desert heat is no longer a barrier between West and East. The apples of Washington and Oregon, cooled near their native orchards, stand side by side in the Eastern chill-room with apples from New England and Virginia, and are usually in far better order than are the latter. The peach growers in Georgia operate precooling plants during the six weeks that their crop goes to the Northern markets. Without refrigeration Georgia would not grow peaches, and the New York peach season would be a month shorter at least. Throughout the grape growing districts of the Great Lakes numerous small chill-rooms testify to the advantages of refrigeration in getting grapes to market. The luscious

cherries of the far Northwest, packed and shipped under refrigeration, set the cherry standard in the East. The famous Oregon raspberries are now enjoyed in Minneapolis; refrigeration and good handling will put them on our New York tables at no distant day. And so one might continue through the long list of fruits and vegetables to which we are so accustomed that we accept them without question.

Consider, also, the more necessary articles of food—meats, poultry, butter, eggs, cheese, and even cereals. The chill-room of the Western packing house and the refrigerated car have served to bring the cattle, sheep, and hogs of the West to the East without the loss and expense incident to transportation on the hoof.

Both the Atlantic and Pacific coasts depend on the Middle West corn belt for poultry and eggs. Their preparation for market involves chilling and they must travel the thousand miles or more to market in a refrigerated car. The supply of Eastern butter would be sadly inadequate were it not reinforced by the butter from Iowa and Nebraska, made, carried, and kept under refrigeration.

Such a widespread use of low temperatures has not come about in a haphazard fashion. The wider areas of production; the more distant markets; the losses that the growers, packers, and merchants suffered because of decay in transit, or the failure of their goods to withstand the vicissitudes of marketing, and the scarcity of foodstuffs, all combined to force the industries to look for better methods of handling. Agricultural colleges, State Experiment stations, and the Federal Department of Agriculture have recognized the necessity for research work and the demonstration of improved methods, and are spending time and money to the end that quality may be preserved and waste lessened.

It is not possible in this brief statement to give the details of methods best adapted to the preparation of perishables for marketing, nor the exact rôle played by refrigeration, instructive though it would be in the light of marketing problems in the great cities. One fundamental, however, is of universal application and of supreme importance if efficiency in city distribution is to be secured, namely, a maintenance of the low temperatures already instituted by the packer and the carrier until the consumer is reached. So long as the products are under the care of the packer and the carrier, intelligent efforts are made to prevent decay. When the products reach the market they are almost invariably removed from the cooled car to a platform or warehouse which often maintains high atmospheric temperatures. Eggs, butter, poultry, and vegetables stand for hours in the summer sun, or beneath a thin wooden roof, and are then carted in unprotected trucks through hot city streets to markets which are not provided with mechanical refrigeration and wherein even the icebox is of antiquated construction. Improved methods of handling are bringing our foodstuffs to our city's gates in better condition than ever before; but the ignorance, carelessness, and lack of facilities for the handling of perishables after they reach the cities result in a lowered quality to the consumer and the actual destruction of an enormous amount of foodstuffs because they become unfit to eat. Good handling and refrigeration prevented decay while a thousand miles or more were traversed. Bad handling and the lack of facilities in the great cities nullify the work previously done.

Only recently have the cities begun to face the problem of the distribution of foodstuffs seriously. It is a problem into which refrigeration enters and without which it cannot be solved. In what manner the fundamental principles of the good handling of perishables, namely, clean, dry, cold surroundings, are to be provided at the market center must be devised for each center. The marketing equipment, however, using that phrase in the broadest sense, must begin with suitable refrigerated terminals into which the refrigerated carrier can be run so that the contents can be removed in a cool atmosphere. The present pier, dock, and yard unloading must cease if we are to preserve quality and prevent waste. After the removal of the

goods from the carrier they should be held in suitable chilled rooms until required at their respective wholesale or retail destinations, and they should be conveyed thence in insulated trucks. Such precautions, although planned to prevent waste from too high temperatures, will also protect against the losses due to the freezing of foodstuffs in the winter time.

The ideal method of meeting the above requirements would be a wholesale market with abundant refrigerated space, combined with a union railroad and steamship terminus, provided the city received its foodstuffs by both rail and water. In the smaller cities, with comparatively simple traffic arrangements, this problem is not difficult; in the large cities where it is most needed it is complex. However, when one considers the extremes of temperature which prevail within short periods over most of this country, and the growing shortage of foodstuffs, one cannot fail to realize that radical measures must be adopted for the protection of the people. There will come a time when the vendor of perishable commodities will be required by law to provide refrigerated space in which to hold them, as he is now required to maintain his premises in a sanitary condition.

In most of our large cities the warehouse facilities for the conservation of foods for use in the season of scarcity are far better than those for immediate food distribution. In other words, cold stored foods are generally better handled until they reach the retailer than the so-called fresh. The sins of the retailer are not within the province of this article. It may be well, however, to discuss, briefly, the cold store, since upon it depends very largely the feeding of our people in winter time.

The past twenty-five years have witnessed not only the advent of the refrigerated warehouse, but its development from inadequately insulated, wood-lined rooms to concrete constructed, well insulated buildings maintaining temperatures that do not vary more than two or three degrees from year to year. Scrupulous cleanliness is maintained, also. The moisture in the air is regulated as well as the temperature, and great care is exercised to prevent odors. Most of the warehouses are provided with railroad sidings—hence the objectionable warming or sweating of refrigerated products when unloaded in yards, or on docks, is prevented. If the commodities are to be preserved hard frozen they are placed immediately in rooms wherein the temperatures fall between -5° F. and 10° F., or even lower, as in the case of butter or fish. If they are to be "chilled," as in the case of eggs, the room is cooled to 29° F. to 31° F. Separate rooms are provided for eggs, apples, vegetables, etc., because of conflicting flavors.

When the owners of the produce remove it, generally to the wholesale merchants, it may or may not be well treated, depending upon whether the establishment is or is not equipped with refrigeration. Almost invariably cold stored products are abused after leaving the wholesaler. The consumer pays the price of the loss by decay, and, ultimately, the producer suffers because of the disrepute in which the goods are held in the home of the consumer.

It is not possible to feed our great cities without the help of these great food depositories. It is not possible to bring perishable foodstuffs to our cities, nor to market them, without the help of refrigeration. It behooves us, therefore, when planning that most important item in the city's maintenance—the food supply—to make refrigeration continuously available from the producer to the consumer.

XII. THE GRADING, PACKING, AND MARKETING OF FARM PRODUCE

BY L. J. LIPPMANN,

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The principle of coöperation in its relation to the producer has been variously applied during the past half century in almost every direction except the right one, with the result that few, if any, of the movements in this direction have prospered, and a long list of failures mark the last resting place of a very large percentage of these experiments. This does not in any way discredit the value of coöperation, but should serve as a warning against its misapplication. The old adage of "Shoemaker, stick to your last" may well be applied. The business of merchandising to-day has developed into an art and the proper cultivation of the soil is a science, and rarely do men possess either the qualifications or the ability to be successful in both walks of life at the same time. Therefore, coöperation among producers is one phase of the subject to be treated entirely separate and apart from any other.

The question of what should be the objects of this coöperation may be divided as follows:

First: A proper regulation of the articles of production, guarding against an overproduction of one commodity and an underproduction of another.

Second: Study of soil and climatic conditions which will intelligently direct the producer and save him the disappointments and losses resulting from an attempt to grow celery on soil best adapted for potatoes, and vice versa.

Third: Study of grading and packing. Producers do not realize how important this particular feature is and how much it means to them in the handling and selling of their fruit. A short résumé on this subject at this time would therefore not be inopportune.

First, shippers should aim to either locate near a depot or shipping point, or should arrange for sidings that will obviate the necessity of long hauls over rough roads, and where this cannot be avoided care should be exercised in the handling, and spring wagons should be employed in the carrying of the fruit and proper coverings provided to save exposure to weather conditions and to avoid the dust of country roads in transportation. Long hauls over rough roads on poor wagons inflict serious injury on fruit which may not be manifest at the time of shipment, but which, after the fruit has been twenty-four or forty-eight hours in transit and in many instances a longer period of time, result largely in its arrival in poor condition and many times in worthless condition. Careless handling and loading in either freight cars or express cars, often in a great hurry, add to this damage and result in serious monetary losses to the producers.

As an illustration of the losses sustained through improper handling, I refer to a statement made by Dr. Pennington, of the U. S. Department of Agriculture, that the production of eggs in the United States aggregates a total of five hundred million of dollars in value, of which 10 per cent., or fifty million, is lost annually through bad handling. Two hundred and fifty million of poultry is produced annually and 10 per cent., or twenty-five million, is lost. Add to this the same percentage of

losses sustained in other food commodities of a perishable nature and it will be readily seen that a small retail saving to the consumer is secondary to the tremendous original waste and that the problem is being attacked from the wrong end, when people agitate for retail markets. This subject, however, will be gone into more fully later. At present I wish to deal with the producer.

If you can take time to grow your crop, Mr. Producer, you must take time to grade and pack it properly for market, and to see that every care is exercised to prevent injury, and to place it on the market in the very best of condition. You stand in the same position that the manufacturer does who studies to produce the very best product that he can in order to meet competition; who, by a high state of efficiency, eliminates waste and therefore reduces cost, and who standardizes his product, creating for it a permanent market and making it a valuable asset. The producer is in a position to accomplish the same results with his farm products that the manufacturer accomplishes with his products.

There are two ways to be successful in business. One is to produce an article at a lower price than your competitor, and the other is to produce an article so good that you do not have to enter into competition with your neighbor, and it is within the power of every producer to accomplish the latter result and he should aim in this direction.

The average shipper has no idea just how his fruits and other products are handled in the New York market, the rapidity with which this work must be done, the hours in which the same is handled, and the elimination process that goes on through the marketing hours with a selection and selling first of the very best products, then the next grade, until finally the last and poorest grade is reached, and this is usually sold at the last and poorest price. With the opening of the fruit markets during the summer months in New York at 1 A. M., and the vegetable markets at 3 A. M., with a frequent handling on one pier alone of some two hundred and fifty to three hundred carloads between the hours of 1 A. M. and 7 A. M., you might form a slight conception of the work that is being accomplished in this market, and these receipts are growing annually. Each year finds new territory entering the field of production with keener competition on the part of producers in the various markets of the country, and in this age of the survival of the fittest only the intelligent producer who exercises the greatest care and intelligence in the handling, grading, and packing of his products can hope to survive and be successful.

The following is a brief set of rules for grading and packing:

Strawberries: These should be packed in standard quarts only and in ventilated containers of 32 quarts, 48 quarts, or 60 quarts. Baskets should be properly filled and rounded off and a few green leaves on the berries often afford some protection when the covers are closed down on the containers and lend a fresher appearance to the same on arrival in market. If possible, these should be loaded at all times in refrigerator cars, and cars should be iced and thoroughly cooled at least ten hours before loading in order that a proper temperature may be maintained in the car after same is loaded. It must be recognized that the natural heat in a berry when loaded in a refrigerator car usually runs the temperature up to a point where the process of refrigeration is not taking place, and for this reason the car should be thoroughly cooled before loading in order that a proper temperature may be maintained after the same is loaded. Care should also be exercised to see that crates, when loading, are properly braced to prevent the shifting of the load when car leaves the station.

Blackberries and Raspberries should be handled the same as strawberries, except that raspberries carry very much better in the pint container than in the quart and should be loaded in containers of 60 pints to the container.

Cherries may be packed and loaded in either quart boxes, the same as straw-

berries, or in 8-pound baskets, the latter being preferable. Baskets should be well filled with the top layer evened down in order that the cover may not press or bruise them. It must also be remembered that cherries which are picked in cloudy or damp weather decay very rapidly, or cherries which are permitted to become too ripe before packing, all of which should be avoided.

Gooseberries and *Currants* should be packed in quarts and in 32-quart containers, the same as berries, but in the case of gooseberries they are not quite so tender and therefore need not necessarily be shipped under refrigeration.

Huckleberries should be packed in quarts, the same as strawberries, but a tight quart should be employed. Very frequently shippers make the fatal mistake of using a strawberry quart with ventilated corners for huckleberries, with the result that the space in these quarts is large enough to permit huckleberries to run through the quarts, arriving in market with half of the contents lost in transit. Sometimes, also, shippers seek to avoid this by filling these corners of the quarts with paper, but this paper shifts and it fails to serve the purpose, and for this reason only a tight quart should be used. Care should also be exercised in shipping the berries in a clean state. Carelessness in packing, mixing partially ripe or green berries, and in many instances sticks and leaves in the quarts, should be avoided, as these things naturally destroy their appearance and their saleability. This fruit should be shipped in a clean state in order to insure the best results.

Plums of all kinds may best be shipped in the 8-pound handle basket and solidly packed to avoid bruising in transit, and care should also be exercised not to gather same in an over-ripe condition.

Quinces, *Apples*, and *Pears* are best handled in standard barrels and the practice of packing largely resorted to by the producers in improperly grading same has been a decided disadvantage to them and a loss. These three articles should be graded, first as to size, second as to variety, third as to their condition, i. e., being free from scars, scabs, worm holes, etc., and packed into three grades, fancy, choice, and seconds, with fancy consisting of the large fruit that is absolutely clean and free from fungus or other imperfections; secondly, the large fruit which is more or less imperfect and which would grade as "choice," and thirdly, the "seconds," which is the undersized fruit.

Peaches: There are several methods employed in the packing and grading of peaches. Georgia, North and South Carolina, Missouri, and Arkansas use all together what is known as the 6-basket carrier, rejecting all imperfect fruit and grading only their perfect fruit according to size into several crates, such as extra fancy, fancy, and choice. The "extra fancy" being the large or two-tier pack of fruit, the "fancy" being the medium or two and one-half-tier pack of fruit, and the "choice" being the smaller or three-tier pack of fruit. Other sections employ the use of the carrier on their extra fancy fruit—that is, the two and a half and two-tier fruit—and use the bushel basket for the lower grades, and this has been found to prove the very best method to employ. I cannot dwell too strongly upon the necessity of exercising every care in picking this fruit from the tree, using canvas-lined baskets to prevent bruising. No matter how slight the bruise may be—it may not be manifest in packing time—but this will develop into rot and decay after same is in transit to the market and means a loss to the shipper. The same caution should also be exercised with reference to properly cooling the cars before the fruit is loaded, and where systems of precooling have been adopted and the fruit is properly pre-cooled even before packing, thereby roughening the fiber and skin of the fruit before the same is rehandled, it has been found that the fruit will carry better and arrive in better condition.

Watermelons: These should be graded according to size and cars should be loaded under the following averages of weight: 18 to 20 pounds, 20 to 22 pounds,

22 to 25 pounds, 25 to 28 pounds, 28 to 30 pounds, and upward. It is a great mistake to attempt to load watermelons of a 20-pound weight and a 40-pound weight all in the one car, assuming, in doing so, that you have a 30-pound average car of watermelons. The trade that is seeking a 30-pound average car of watermelons cannot use a 20-pound watermelon, and the result is that a car loaded in this way serves no purpose and pleases no customer, and usually sells at the average value of the smallest watermelon in the car. Another precaution which should be observed is to see that all cars used for the loading of watermelons are thoroughly cleaned out and swept before watermelons are loaded in them. Very often shippers are careless and use a car in which guano had been loaded without cleaning out the car, with the result that the watermelons become infected with this guano and the same eats into the rind, bringing the car into the market with a large quantity of decayed watermelons. Care should also be exercised against the shipping of watermelons that are not fully ripe, a thing which is frequently done and which not only works a temporary injury but a lasting one, for the reason that an immature fruit bought by a consumer and thrown away discourages the use of same by this consumer for the balance of the season. Care should also be exercised in using thoroughly ventilated cars for the shipment of watermelons, and same should be properly braced to avoid shifting in transit and the necessary breakage that will result therefrom.

Cantaloupes: The best package that can be employed for the use of cantaloupes is the standard slatted crate. This is a crate of the dimensions 12 x 12 in the heads, and 24 inches in length, the heads being made of solid veneer and the sides being covered with 2½-inch slats with air space of about three-quarters of an inch between the slats.

Cantaloupes should also be selected as to size and usually packed 36, 45, or 54 to the standard crate, according to their size, same being uniform. Care should also be exercised not to pack a cantaloupe before the same is properly matured and becomes free from the vine, and the same should be well netted. Over-ripe cantaloupes should not be packed at all, or, if intended for nearby markets, should be separated from the other cantaloupes and packed in crates as "Ripe" by themselves, but never mixed with the firm stock.

Oranges: These are usually separated into four grades, namely: fancy brights, brights, russets, and golden russets. These are usually graded in a grading machine which separates them as to size, and then packed accordingly, either 96, 112, 126, 150, 176, 200, 216, 250, or 288 to the box. Each fruit should be wrapped in tissue paper, and I cannot dwell too strongly upon the necessity of a careful selection of this fruit and the exercising of every care against the bruising of same when being picked from the trees, all of which will be manifest in their condition on arrival in market. The use of a neat box, even though the same may cost a few cents more than a cheap or poorly made orange box, the use of branded tissue paper for the packing of oranges, and anything else that might be done to improve their appearance helps in their sale, and very frequently pays for the extra care and expense involved in packing them properly.

Grapefruit: These should be handled precisely the same as oranges, except that they should be properly brushed and cleaned before being packed, and for this purpose, at the present time, cleaning machines are obtainable. There should also be graded and packed according to the following sizes: 28, 36, 42, 54, 64, 80, and 96 to the box, and all of the precautions in packing and appearance referred to in the case of oranges should be observed with grapefruit.

Tangerines and Mandarines should be handled in precisely the same way as oranges and grapefruit, but packed in half boxes, of which two are strapped together.

Pineapples: A great mistake on the part of shippers is made in the shipment of

pineapples too green for market. These arriving in the Northern markets during the winter months or early spring, when weather is cold in an immature state, never ripen unless by artificial means in ripening rooms, but will command full value when arriving here in a good colored condition. On the other hand, pineapples shipped during the summer months, when weather conditions are warm and pineapples ripen naturally very quickly, should be shipped in a greener state.

A mistake is also made in grading these and packing them undersize, causing them to arrive in market in a slack condition in the crates and causing chafing in transit, which results in deterioration. Pineapples should be graded fully up to size, each individual pineapple wrapped in a heavy paper for protection and packed in crates, grading as follows: 12, 18, 24, 30, 36, and 42 of the Red Spanish pineapples, while the Abakkas and Sugar Loafs should be packed in crates containing 6, 8, 10, and 12 to the crate. These large varieties of pineapples, being more or less tender, should be protected by being packed in a light excelsior in order to prevent bruising.

Cabbage: The cabbage shipped from Southern points in the early spring is usually crated in barrel crates, and should be solidly packed, and all soft and spongy heads eliminated. During the fall and winter months, cabbage may be shipped either in cattle cars or later, in cold weather, in refrigerator cars, packed loose in the cars, but during the warm or summer months should be crated and usually shipped in refrigerator cars to prevent deterioration. Care should also be exercised in not mixing the varieties. As an illustration, Wakefield and Flat Dutch should not be mixed, nor should Domestic and Danish Seed cabbage be mixed, nor should Red and White cabbage be mixed, each selling best if graded by itself.

Cucumbers: These should be separated into three grades. Fancy cucumbers should consist of only the smooth, long, straight, green cucumber, and not the over-large or thick, spongy cuke which might best not be shipped at all. The second grade should consist of the choice cucumber or those not sufficiently perfect to grade as fancy, and the third or call cucumber should consist of the undersized or misshapen, and these are usually taken by the pickle houses, if separated in this way, at fair prices.

The bushel hamper has been found the most advantageous package for these cucumbers, and I would strongly advise never shipping under refrigeration, as they carry better under ventilation and do not deteriorate quite as quickly as when shipped under refrigeration, with the radical change of temperature made when they are unloaded from a refrigerator car and exposed to the warm atmosphere, causing them immediately to soften and turn yellow. I would also strongly advise never shipping a yellow or wilted cucumber.

Green Peas and String Beans should never be packed following a rain and when filled with moisture, as they ferment, heat, and deteriorate in transit, but should be packed cold and packed in bushel hampers, and care should be exercised to see that the hampers are well filled and packed down; otherwise, with the natural evaporation that takes place in transit, they arrive in market in a slack state which militates against their sale and causes low prices.

Care should also be exercised in not packing either beans or peas until they are properly matured, and equal care not to permit them to become overgrown or over-matured, either of which faults will result in low prices.

Tomatoes: With the exception of nearby points where the bushel crate is used, the most desirable container for tomatoes is the 6-basket carrier. Tomatoes should also be separated as to size and packed in these containers: 72, 96, 108, 120, 144, or 188 to the crate. Care should be exercised not to pack a tomato too green or immature, or one which will never ripen, or an over-ripe tomato, and care should also be exercised never to pack a ripe and a green tomato in the same carrier, but rather separate them, marking the crates as to their condition and maturity. Misshapen or

split tomatoes or those containing other imperfections should be rejected and never shipped, as they only injure the sale of the good tomato. During the warm season it is advisable to ship these under refrigeration, as they carry better in this way.

Egg Plants should be packed in half barrel crates; each egg plant should be separately wrapped in paper to prevent bruising and chafing, and these should also be separated as to size, and number of egg plants contained in each crate marked on the crate.

Potatoes: During the early spring months potatoes are usually shipped in double-headed barrels or burlap bags, the purpose of using these barrels being to prevent bruising due to the tenderness of the skin on the potato. These should also be graded into three sizes: fancy, bright, and seconds, according to their size. Later in the season, when stock is thoroughly matured and the skin is firmly set on the potato, the same may be shipped in sacks containing 11 pecks, or 165 pounds net, to the bag, but this should never be done during the early part of the season and when the skin is not thoroughly set on the potato.

Celery: This should be properly bleached before shipment, and carries best in the 12-inch Florida celery crate with a separation made as to the sizes of the stalks, being packed accordingly, either 6, 8, 10, or 12 dozen to the crate, and in some instances larger.

Lettuce: Too frequently the mistake is made on the part of shippers in forcing lettuce into market before it is thoroughly matured and well headed, and very often well-headed lettuce in a green state or before the same has begun to turn white at the heart is forced into market and is sold at low prices.

Care should be exercised to see that lettuce is well headed and the same is thoroughly dry before packing, and lettuce should never be packed except with the faces of the heads toward each other. Frequently the mistake is made of packing the butt end of one head of lettuce on the face of the lower head, with a result that this butt bruises the face of the lower head of lettuce and causes decay and deterioration. The half barrel hamper has been found to be the best package for the carrying of lettuce and the same should be solidly packed, and wherever possible, unless to nearby markets, shipped under refrigeration in order to insure its carrying in good condition.

Poultry: There are two methods of dressing employed in preparing poultry for market, one being the dry picking method and the other scalding. Certain sections of the country prefer one or the other of these methods, but the New York market for home consumption prefers dry picked poultry. Care should be exercised in preparing poultry for market to see that same is thoroughly freed from congealed blood in the mouth after killing and dressing, and that same is thoroughly cooled and freed from animal heat before packing, as this is dangerous and frequently results in the poultry arriving at destination "Struck green" and unfit for human consumption.

Poultry should be graded—chickens, fowls, cocks being packed separately, turkeys being similarly separated, Young Toms, Old Toms, Young Hens, Old Hens being packed separately and also graded as to quality, fancy or culls; the imperfect shaped, crooked breasted, or thin, starved birds, or discolored ones being packed under a cull grade.

Clean packages should be used and a separation of each layer in paraffine paper improves the appearance, or, if intended for cold storage, each bird should be wrapped in paraffine paper. All packages should be plainly marked as to contents, giving the number and kind of poultry it contains, also the gross weight, tare, and net weight.

The use of paper in packing referred to is for dry packing and not ice packing, when same should not be used, as it would prevent the cold water from circulating

freely through the package and keeping the contents cold, a thing which is necessary to prevent deterioration. Ice packing should only be resorted to when proper refrigerator car shipments cannot be made, but the desirable method of shipment is dry packing under proper effective refrigeration and, wherever possible, precooling before loading in cars.

Fourth: Proper distribution.

The tendency to overload one market and to undersupply another, making an improper distribution, is one of the pitfalls of the shipper which causes endless disappointments and monetary losses, which could be well avoided by proper regulation.

Thus: A telegram arrives at shipping point announcing that Boston or Chicago market is \$3.00 per crate for tomatoes. New York market \$2.00. Result—every shipper immediately overloads the high market and dodges the low market. Ultimate result—these shipments break the high market to \$1.50 or lower per crate, while the low market, which is undersupplied, jumps to \$3.00 per crate, and then history repeats itself again and again.

This haphazard method of distribution should be replaced by proper coöperation, and all markets should be uniformly supplied in accordance with their requirements. If this is done the extremely high as well as the extremely low prices will be averted, and a fair uniform price maintained which will prove very much more profitable to all shippers than the present unbusinesslike method that is pursued.

The solution of this problem can best be brought about through a well organized branch of the Department of Agriculture, and this branch should be in the hands of a practical man experienced in the art of distribution, with a staff at the various points of production and distribution. In this way they can keep fully informed of actual conditions and so regulate distribution as to prevent gluts, thus serving both the producer and consumer.

Fifth: Supplies. Under proper coöperation, supplies of farm utensils, seed, fertilizers, and packages can be obtained, and even community packing houses might be maintained, not only effecting a great saving to the producer but also standardizing all shipments and opening up a broader market for the same.

As an illustration, the production of cauliflower on Long Island is quite an extensive industry, the large percentage of the output, however, finding its way only to the New York market. Due to the short-sighted policy on the part of the producer in the use of antiquated, worn-out, second-hand, slat barrels for the packing of this cauliflower, which bruise it in transit, and in many instances bring it to market in a semi-decayed condition, its sale is often at low prices, which is a direct disadvantage to the producer and of no material advantage to the consumer.

The establishment of community packing houses in the Long Island producing districts, with the adoption of a proper crate for the packing of this cauliflower, would not only bring it into market in New York in good condition but would also enable its reshipment to a number of the distant markets at profitable prices, preventing gluts, encouraging production, and enabling the Long Island farmer to produce three times as much cauliflower as is produced now, and to do so at a profit rather than at a loss.

I am merely using this as an illustration of what can be accomplished in this direction all over the producing sections of the country, and I feel sure that coöperation along these lines which, to my mind, are practical, will serve to encourage production, discourage waste, and prove a direct advantage to the producer and consumer.

XIII. A STUDY OF MARKETS AND THE MARKETING OF FOODSTUFFS

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A STUDY OF MARKETS AND THE MARKETING OF FOODSTUFFS, WITH SPECIAL REFERENCE TO THE PROVISIONING OF NEW YORK CITY

Object of the Study.—The marketing arrangements and provisioning scheme of New York City are admittedly such to-day as impose upon its citizens an unduly heavy expense for foodstuffs, without correspondingly benefiting anyone. These facts having been proven and the public demand for their remedy having become insistent, it becomes necessary to determine what form the remedy shall take.

This study has been undertaken to furnish an analysis of existing conditions, and of their tendencies of growth, as an aid to the wise planning of the remedy.

Scope of the Study: The form which the buildings, traffic facilities, etc., of a market shall take are all merely outward expressions of an underlying method of operation, which method also governs the locations of markets and the extent of the group of buildings, etc., which shall be placed in any one such location in the provisioning area.

It has therefore been deemed necessary to make a study first of this underlying method of operation, which study is not and cannot well be limited to facilities within the city, but should also include the general subject of the distribution of the supplies of the country among the consuming centers in an economical manner. It must consider not only the various articles of foodstuffs, but such details connected with the production, shipping, etc., of these articles as have effect upon their marketing, and upon their being supplied in sufficient quantity.

Definition: The word market may be, and commonly is, used to designate a place used by a number of independent sellers as a sales place, such as Harlem Market, Wallabout Market, etc., or somewhat more collectively as the markets of a city as a whole, as the New York Market, the Philadelphia Market, or still more collectively as foreign markets, domestic markets, etc.

In this study the word market will be used in the sense of a sales place used by a number of independent sellers.

In the most primitive type of selling, the quantity and quality of the goods sold had to be carefully examined and the money offered in exchange had to be just as carefully scrutinized. There was thus a necessity for an actual meeting of the principals or their responsible agents.

With the meeting of more buyers and more sellers there was more opportunity for each seller to dispose of all he wished to sell and more opportunity for each buyer to secure what he wished to buy, and thus markets tended naturally to continue to increase in size, until the distances which the more remote buyers and sellers had to travel became prohibitive. Each buyer brought his money, each seller his goods, and thus exchange was effected on the spot.

If all the sellers had different commodities, or distinctly different varieties of the same commodity for sale, there would be no need for the establishment of a market

price for any commodity. Each seller could establish his own price, and if the buyers had to have his commodity they would have to pay his price. But where a number of sellers having the same commodity meet a number of buyers, who will buy heavily if the prices are low, less if higher, and not at all if in their judgment too high, and each of whom desires to buy at least as cheaply as any of the others, a set of prices is established for the different grades of the various commodities by a process of offers and refusals, which prices hold perhaps only momentarily, increasing or decreasing with the arrival of fresh demands or fresh supplies. But it is only when by this process of offers and refusals that the buyer has tried out the sellers that the buyer feels that he is sufficiently informed to trade to advantage, or that the seller, from repeated refusals and no trading, learns that his price is too high to enable him to sell sufficiently or at all.

Requirements for Any Market.—To be successful, therefore, any market must furnish the following:

(a) Means whereby all those who wish to buy can freely and easily communicate with all those who wish to sell.

(b) Means whereby all goods and the equivalents therefor offered may be inspected and tested for quantity and quality.

(c) Means whereby all goods sold may be delivered and the equivalents therefor collected.

(d) Means whereby the demand acting on the supply can establish temporarily a uniform scale of prices for the different grades of the various commodities.

Additional Requirements for a Provisioning Scheme: Any market is, to some extent, a provisioning scheme; for, by the facilities for trading which it furnishes, it naturally and without premeditated action in this direction on the part of any of the persons concerned draws to itself commodities from quite distant producing areas.

When, however, a number of markets draw on the same producing areas there comes a time when by some premeditated action on the part of those concerned it becomes necessary to furnish:

(e) Means for averaging the supply so that oversupply and consequent waste shall not exist at some points and deficiency with consequent high prices at others.

There is for each of the different classes of consumers served by any market, depending upon their wealth, some limit of price which they can afford to pay for any commodity.

As prices get higher and higher they refrain more and still more from the use of this commodity, and as prices lower they use this commodity more and still more freely, often to their benefit. It is not therefore sufficient merely to have the market supplied with the various commodities, but it is necessary to supply the markets at prices which the consumers can afford. This gives rise to the further requirements of a provisioning scheme:

(f) Means for lowering the cost of the various commodities to the final consumer by the elimination of unnecessary expense and waste.

(g) Means for the stimulation of low-priced supplies by the removal of the uncertainties which have made the marketing of such supplies over-hazardous for the producer.

Program of Study.—With these requirements for any market in mind, it will perhaps be well to look over the field first comprehensively, then more in detail, and later, if need be, to study especially particular points.

Having by such study familiarized ourselves not only with the procedure of the present, but also with the lines along which progress is being made toward remedying the existing bad conditions, it will be well by a process of trial and rejection as between ideals and immutable human tendencies to determine, from the one or more probable schemes evolved, those of their common factors which have need of recog-

nition in the physical structure of such a market as would be and would remain useful for some reasonable time to come.

To illustrate so that the reasonableness of expending so much labor shall appear:

Illustration A.—Standards whereby to describe the quality of various foodstuffs have come into more common use in the last several years.

At first, and in many cases at present, these standards are only of local acceptance. With their more general acceptance and their more rigidly honest observance it becomes possible to sell goods by description only.

When this is accomplished, the market with all its traffic and commodity handling conveniences alters and becomes an Exchange with its meeting floor and suites of offices, to the very considerable benefit in delay and haulage expense saved of all concerned.

Illustration B.—Again, when means of transportation, such as an improved parcels post, are developed, with rates which are not prohibitive, a considerable part of the foodstuffs which were brought in comparatively small quantities, aggregated and shipped, sold and probably resold in large quantities and later again sold and distributed in small quantities, will have a strong tendency to be sent directly from producer to consumer; in this, far reducing the functions of the market, perhaps, to those of the determination of prices and of standards of quality.

The Field Comprehensively.—To-day a large consuming center like New York City draws its food supplies from far and near over a large producing area, the largest part being brought in by rail and steamer, and a very much smaller part by trucks from the surrounding country.

This producing area serves many consuming centers at the same time and, consequently, instead of all shipments from the producing area converging on one center, they are going many ways at once.

Some of the nearby producers carry their goods to market themselves, selling generally to the retailers, but the great bulk of the marketing is done through one of two sets of intermediaries, the commission men in the market to whom the goods are consigned for sale and the retailers, or through a system of shippers, receivers, jobbers, and retailers.

All of these buyers and sellers are working for their own personal gains, in large part without coördination of effort and without adequate information or control of the situation. Corners are attempted and succeed or fail in this or that crop; shortages and gluts succeed each other rapidly; crop failures of one section benefit another; car shortages turn valuable crops into useless waste; goods shipped to markets which are short arrive when the market is flooded, etc.

Everywhere there is activity, uncertainty, speculation, efforts at cross purposes, gain and loss, waste. Plenty of effort, plenty of order within certain limits, but all of individuals or independent companies. No central, dominant intelligence, advising, directing, controlling, compelling the proper distribution of the food supplies among the consuming centers to the great benefit of all concerned, the marketing of to-day has, by a number of those engaged in it, been freely described as being in a chaotic condition.

There are, however, organizations of producers for shipping and marketing and other similar movements already in operation or organizing which, if they become sufficiently far spread, may greatly modify and benefit the existing conditions. These will be treated later.

It becomes at this point desirable to note the change which is taking place in the whole attitude of persons having business relations.

Previous to the last few years, business men and economists in general saw the principal hope of human progress, on all but the religious and ethical sides of life, in that striving of man with man which they called competition.

In their minds' eyes, this was a race wherein men ran side by side under fair rules and order, with a free field ahead, and the best man won. Actually, it was much more frequently a fight in which the contending parties strove partly to advance in their direction and partly to impede the advance of others; and quite frequently it was a general mêlée, out of which some one merged or escaped with the prize won by force or by low cunning more often than by merit.

Long and sad experience has proven amply that, while competition sharpens the wits, it does not always sharpen them in any way beneficial to the community nor even to the particular ones so sharpened on any other than their financial sides. Competition in commercial life sometimes causes improvements, but where those in the competition realize that each improvement made by them only provokes a like improvement by all the others, and thus a reestablishment of nearly or quite the previous state of competition; but, with an additional outlay of capital for the improvements, without a sufficient increase of total profits to be divided to pay for the capital so laid out, then competition can and does cause the suppression of improvements which are not so pronounced and basic as to give, for some considerable time to the competitor who puts out the improvement, a much larger share of the total business or total profits than he had before.

Under competition there is a large waste and a bad misdirection of energy. Each competing individual or group must be fully equipped for the competition, and a very considerable and expensive part of such equipment is the advertising and selling force devoted mainly to securing for such competitor a chance to usefully and, incidentally, gainfully be of service to others.

Certain wise men of finance, appreciating this, some few years ago brought about great consolidations, especially in manufacturing lines, converting these warring competitors into mutually helpful units, to their great benefit. Unfortunately, this, in many cases, gave them also practically complete control of the situation so that they were free to adjust the prices charged to their own ideas of what would yield them the maximum profit which it was wise to take.

Such a situation has its dangers. However, up to date, these large combinations have generally behaved with great wisdom and moderation. And, irrespective of who in this country has the profits, the country as a whole is richer by the savings of those misdirected energies of the competitors.

The general public has, in these past few years, come to realize with increasing clearness the advantages of coöperation not merely among the producers, but among the consumers as well. And in increasing numbers, each swallowing that perhaps inborn hope of raising himself above his fellows, they have turned toward better ideals of equality and fraternity.

In place of the old suspiciousness, secretiveness, and jealousy, there is now abroad in many directions an amazing degree of good will, generosity, and helpfulness. Not only are producers recognizing the advantages of helping each other, but they begin to see the desirability of treating the other side of the market, the consumer, in some fairer way than competition and the law of demand and supply, as previously applied, provided.

The producers, especially the farmers, being better business men and having more at stake than the consumers have been in this country more successful in establishing coöperative groups. But the movement is in the air and it would seem to be a mistake not to consider well the probable effect of the general adoption of such methods when planning for a marketing system.

Producer.—Taking up the consideration of the field more in detail, let us consider first the producer and his money—crop or crops, i. e., those which he sells outright for cash; and also his transportation means.

Given a farmer whose climate, soil, period of his crop rotation, distance from

market, transit facilities, acreage, capital, help, equipment, personal education, and experience make certain crops possible at some particular planting time, what shall he plant to make a profit? What crop and what variety of that crop, and shall he force or retard its development? How shall he know that too many others are planting his choice, and not enough of some other crops which he could grow?

The factors above enumerated and others may narrow his choice of crops to a half dozen, but, even if narrowed down to one, there is still the choice of whether early or late varieties are to be planted; still the gamble as to whether, after having, by skill, foresight, and labor, brought to harvest a large choice crop in spite of weather, diseases, and pests, he will find the market glutted or short; still the farther uncertainty as to what, between spoilage in transit and improper returns, he will actually receive in cash for his crop.

If his acreage be large enough or, not being large, be close enough to market to permit of small shipments, he may, by growing a number of different crops of this perishable type, escape the necessity of risking so much on a single throw.

Still, he must get and prepare his seed, prepare his ground, and plant long months before he can harvest. And all others must do the same.

A difference of one or two days in the time when goods reach the market quite frequently marks the difference between a good profit and a heavy loss.

Except for the growing of fruits and vegetables on contract for canneries, there is little buying or contracting for crops before they are planted. The uncertainty as to the size of his crop would still be upon the farmer, but the uncertainty as to the total acreage of the whole producing area of this crop to be planted, and those of the marketing, would be upon the speculator, and the speculators do not seem to care to take such odds. Crops are often bought just after statistics as to the acreage actually planted throughout the producing area, conditions, etc., have been gathered, but here the speculator is taking a much smaller chance than the farmer has to take.

There is no trustworthy information generally available sufficiently in advance, and none other than isolated private means on most foodstuffs for getting a reliable canvass of the doings of those who, because of their earlier season, have already planted and of the intentions of those who have not yet planted. And such information, if gotten, would have to be much modified by a knowledge of the farming abilities, ordinary yields per acre, etc., of the various planters before it would furnish much of a basis of judgment whereby to plant.

The expense of such a canvass is far beyond the means of the ordinary producer and far beyond the pecuniary benefit which it could be to him.

Under these conditions, what to plant is sometimes based upon judgment born of long experience with this gambling game; more often it is a mere matter of opinion. Some farmers, for, to them, a sufficiency of reasons, grow the same money crop each year, some grow the same variety each year, trusting that if they miss it this year they will hit it next; others switch back and forth, sometimes hit it two or more years in succession, and perhaps oftener miss it year after year.

Among foodstuff crops, one of the qualities of most importance from a marketing point of view is perishability.

A crop may lose value by loss of appearance, or of both appearance and quality, as a consequence of ripening which it is not possible to delay without cooking or canning, and this may come about when under good conditions of ventilation, temperature, moisture, and freedom from bruises, initial blemishes, direct exposure to sun, motion or physical violence, or it may be caused by a poor condition of any of the above.

By carefully keeping crops under good conditions, their perishability may be greatly reduced, and thus some of the most perishable are brought long distances to market—*vide* berries from North Carolina to New York City.

The producer has to consider, then, that a crop of his which may have time enough to await in market an opportunity for an advantageous sale, if conditions can be kept favorable to its lasting en route and when in storage, must perhaps be marketed at once if these conditions are not right, and may not therefore bring him anything like as satisfactory a return.

Among foodstuffs, perishability may be considered as being of four quite different classes.

First: Those foodstuffs such as peaches, berries, sweet corn, tomatoes, milk, etc., which cannot by cold storage or other means except preserving, etc., be kept unspoiled more than a few days after they are ready to be eaten. These will hereafter be spoken of as "*perishable*" foodstuffs.

Second: Those foodstuffs, such as certain varieties of apples and pears, also potatoes, cabbage, etc., which can be stored in cool storage and so kept for a limited time, depending upon the variety (kind) of the article thus stored. These goods spoil rapidly when thawed after freezing, but if kept cool they will last varying times up to perhaps nine months, in the case of some of the best keepers. Without some type of cool storage, whether natural or artificial, these same foodstuffs would probably not last more than a month.

These will hereafter be spoken of as "*semi-perishable*" foodstuffs.

Third: Those foodstuffs such as fresh meats, eggs, fish, etc., which will remain unspoiled if kept frozen for very long periods, but which would spoil quite quickly at summer heat. These will hereafter be spoken of as "*cold storage*" foodstuffs.

Fourth: Those foodstuffs such as grains, dried fruits, dried legumes, etc., which will last almost indefinitely if merely kept dry and free from insect pests. Such will hereafter be spoken of as "*non-perishable*" foodstuffs.

Several of the perishable crops are openly classed by producers as "*gamble*" crops, both because of their perishability and because of their quantity and the frequency with which they arrive on the market; crops which one day may bring a good profit and on the next day not bring enough to pay their transportation expenses.

The producer necessarily grows his crops in wholesale quantities. His is to a considerable extent a manufacturing proposition, and as such, to keep costs low, he must produce large quantities of like article.

The Nearby Producer.—Where distance from market is not prohibitive, and where he can secure sufficiently trustworthy help so that he can absent himself from his main work of production, he may market his "*semi-perishable*" and sometimes his "*perishable*" goods direct to retailers. He may even sell his "*semi-perishable*" goods direct to consumers who, in this case, buy in such sized quantities that the producer can afford to deliver. But apart from a very few producers who have undertaken the "*hamper*" distribution scheme, whereby the consumer places an order in advance for a hamper to be delivered to him once in so often and to contain a variety of such vegetables and fruits as the producer can in his judgment furnish best, there is little direct selling of "*perishable*" foodstuffs from producers to individual consumers. Restaurants, hotels, institutions, and other aggregated consumers are sometimes supplied directly by producers.

Thirty to thirty-five miles over good roads and easy grades is about the limit of distance for horse-drawn vehicles and, while longer distances could doubtless be traveled by motor trucks, they do not seem to have been so employed to any considerable extent around New York.

Transportation.—Cars, ships, or other means of transportation are run either on a time schedule or else at the convenience of shipper and of the transportation company.

Cars, ships, and steamboats run on schedule are usually operated in lines, having

regular times and places for the loading and landing of freight, and agents who solicit for, receive, and deliver it.

They take freight in any quantity, large or small, and, since they carry crews whose business it is to personally conduct these means of transportation over the line's route, they are usually quite reliable. Such freight "lines" are usually only operated from and to those points where there is sufficient regular traffic during the operating season to justify the service, and are commonly used for fast freight service mainly.

Steamships, steamboats, and other vessels may be engaged specially, i. e., chartered to carry cargoes of goods between certain points, but, in this case, whether used or not, a considerable portion of the maximum capacity of the vessel must be paid for.

Steamboats.—Local steamboats running on regular schedules furnish very convenient and reliable means for the transportation of "perishable" and "semi-perishable" produce in any sized quantities. The producer delivers his produce to the steamboat dock and the commission man or receiver, whose aid is generally used in this type of marketing, trucks from the boat to the market. As a consequence of this reliability and convenience the growing of diversified crops of the "perishable" type receives considerable attention in those parts of the country convenient to the landing places of those river, harbor, and canal steamers which cater to this type of freight.

Boats driven by wind, steam, or petroleum, and owned and operated by the producers themselves, are, in some cases, used to transport foodstuffs. Vessels are also sometimes chartered by producers or groups of producers.

Canal Boats.—Animal-drawn canal boats have in the past been much used for the transportation of non-perishable and even of some of the semi-perishable foodstuffs. Service on many of the canals around New York City has deteriorated considerably and in most cases, if available at all, is so only for whole boatloads. This inconvenience has reached the point where railroad services even at their much higher rates are generally preferred.

Railroads.—Cars differ in dimensions and there is for each particular car a maximum weight-carrying capacity, beyond which that car must not be loaded. Depending only in part on the size of the car, and mostly upon a mass of compromises, agreements, etc., between the shippers and the railroads and between the various railroads, there is, for each particular commodity, according to its classification, a minimum car load, which is the least weight that can be transported exclusively on that trip of that car without additional payment for this privilege. Any quantity between the minimum carload and the maximum load for the car actually used can be shipped; and less than carloads can also be shipped thus exclusively as carloads by paying for the minimum carload weight at the rate to the destination for the particular commodity shipped.

In the very many cases where the scheduled fast freight line service is not available goods have to be shipped by ordinary freight.

Goods may be shipped by rail in less than carload lots; by railroads or by train loads, and this by either ordinary or, where available, by fast freight line.

While whole train loads go through with generally only delays for change of engines and for a right of way along the tracks, cars, if not shipped by scheduled lines and if so destined as to require transference from one division to another or one road to another, have often to wait at junction points or switching yards for resorting and making up into trains.

Goods in less than carload lots shipped by ordinary freight may have, in addition to the above delays, those caused by making up out of the miscellaneous articles received from the various shippers a carload for the same destination, or, in lieu of a

sufficiency for such destination, of a sufficiency for a convenient junction or switching point on the route toward that destination.

Since few but the least perishable of foodstuffs can stand the repeated handlings and delays incidental to shipment by ordinary freight in less than full carloads, those producers who ship perishable goods by rail must either :

- (a) Have scheduled fast freight service;
- (b) Have sufficient goods ready at one time to make full car loads; or
- (c) Pay the difference between the loads they have and the minimum car load, for the sake of the condition of the goods on arrival at market; or
- (d) Combine with other producers then ready to ship, so as to get somewhere between minimum and maximum car loads; or
- (e) Sell to either speculators or those who, at some local shipping points, make a business of buying and shipping.

Goods in any quantity shipped by scheduled fast freight and goods in train loads seldom get lost; single cars get lost with considerable frequency, and stay lost sometimes for days at a time; less than car load shipments often fare worse.

A railroad, having once accepted goods as perishable, is liable for the damages which the goods can be proven to have sustained by delays beyond a reasonable time for transportation. The shipper will therefore suffer less loss if the goods are delayed sufficiently to be spoiled utterly than he will if, as is more often the case, they are damaged slightly, in which event it is often difficult to prove damage.

Almost all foodstuffs, except parts of the milk and meat supplies, brought to New York by rail have to be taken to market from the railroad by trucks.

Express.—Transportation by express, with its widespreading combination of facilities to forward expeditiously shipments of any size, large or small, from the producers nearest the express station to the commission man or receiver direct, would be the ideal way if it were not for the high charges usually made.

Steamship lines, because of their great per diem expense and of the time and facilities required to dock them, cannot "call" for small freight offerings as can river steamboats. They can, however, take individual shipments of any size, large or small; and they often use any or all of the above described means to collect their large cargoes at a few main shipping points.

Deterioration in Transit.—Wagons or motor trucks can cause goods to deteriorate very rapidly or very little, depending upon how they are equipped and how handled.

Steamboats generally carry the goods under cover on deck, and, therefore, furnish pretty good ventilation; do not expose to very high temperatures nor to strong sun. Depending upon the roughness of the water, they may or may not cause the goods to suffer from the motion and shock.

Steamships have very often cooling rooms for the transportation of perishable foodstuffs. For goods carried in the hold their ventilation is not generally as good as that of steamboats, but is often superior to that of the ordinary freight car.

By rail foodstuffs are generally shipped in box-cars, which may be the ordinary box-car with tight ends, roof, and floor and no ventilators, or it may be ventilated, or it may be a special car, like a refrigerator car, slat-sided, like a cattle car, etc.

Perishable or semi-perishable goods shipped in a tight box-car in even moderately warm weather may "heat," "sweat," and take considerable damage; shipped in hot weather they may easily spoil; shipped in very cold weather they may freeze and thus spoil. Transportation by refrigerator cars, which, by the use of ice in summer and by the ventilators provided in such cars, reduces loss, costs more.

Reliability.—Generally speaking, for certainty, reliability, and freedom from vexatious delays due to mistakes.

The wagon or other privately controlled means is best.

The steamboat is next best.

The steamship next, where difficulties do not arise in getting the goods to the steamship.

The railroad is worst.

Time Taken in Transit.—The time consumed in transit is always composed of two parts—the time spent in moving and the time spent in delays and setbacks. As the speed of the actual movement decreases with the increase of traffic congestion nearer the market, and, as the delays increase with the same cause, short distance shipments to a big market are always relatively much slower than long distance ones.

To make proper comparison of the time spent in transit it will, therefore, be necessary to compare the means available for the different distances.

For very long distances, where there are special inducements for dispatch, goods by whole train loads can sometimes be gotten through quicker than by steamship; but, with convenient means for delivering the goods to steamships, steamships are generally quicker than railroads for goods in either train loads or in the carload lots.

For distances covered by steamboat these are generally quicker than trains.

For distances which can be covered by trucks these are generally much quicker than trains. Animal-drawn canal boats are generally slower than trains. (See Appendix A.)

Costs of Transportation.—Transportation costs are also composed of two parts: the costs incidental to moving the freight and the costs incidental to the handling of the freight at terminals. Freight charges, while figured on the weight moved at the rate fixed for either carloads or less than carloads for the particular commodity moved and are not really based on the cost of such moving.

While the transportation company's total costs of moving the freight and of the costs incidental to its handling at the terminals are recognized to some extent, the principle of making the freight stand what its value, or what the margin of profit in it, will permit is so used in making the rate that distance is, to a very considerable extent, disregarded, and some commodities are carried for much less than actual cost while others pay far more.

Transportation charges, instead of being a simple matter of the total costs of the service rendered plus a reasonable profit for each case, have thus become extremely complicated, due to the injection of this semi-paternal principle.

The consumer is affected by the total transportation costs, since he is generally assumed to pay these with all other charges; the producer or shipper is commonly supposed to be interested only to the extent of securing for himself as favorable a rate as is given to any other producer supplying the same market with the same quality of the same commodity. Actually, however, since, if the price to the consumer becomes too high, the demand falls off, the producer is interested in the total transportation costs.

Since freight rates are made largely as a matter of business policy on the part of the transportation company, rather than in direct proportion to the service rendered, concerted action on the part of a number of shippers frequently has effects advantageous to their interests. Also in shipping, as in all other pursuits, personal interest counts. The shipper who is equipped with and can afford, from the size of his interests at stake, to use means to follow up his shipments from the start to the finish of their journey, will generally get far different service for the same rate

from him who simply delivers his stuff for transportation and then waits resignedly for notice of its receipt at destination.

Transportation by rail presents the advantage which none of the other methods do at present that goods can be carried without rehandling to any domestic market.

This is of advantage to all shippers who attempt to better themselves by taking chances on getting their goods into that market which at the time of shipment offers the best opportunity. It is of especial advantage to those distant shippers who forward their goods to some convenient transfer point in the general direction of their proposed markets and who later, from reports received as to the condition of their goods at arrival at this point and of the conditions in the various markets, order their goods to what seems to be the most advantageous market.

The Securing of Transportation.—Of transportation controlled and operated by the shipper nothing need be said.

Steamboats generally have capacity enough, but require advice in advance of very large projected shipments.

Steamships frequently require advance engagements. They can, however, often make room for the more perishable, more urgent, and, therefore, somewhat better paying, stuff at the expense of delay to something else.

Empty cars for transportation have to be ordered in advance, and, since the railroads often are short of cars, or have none in that locality to place at the shipper's disposal, the shipper has sometimes to wait.

This delay may easily with a "perishable" crop, or, under some circumstances, with a "semi-perishable" crop, mean a complete loss; and, since the railroad assumes no obligation whatever until the goods are loaded on cars, the loss is the shipper's. This was the cause of the failure of one big speculator who attempted to "corner" the Carolina berry market; and it has ruined a number of those speculators who buy apples on the trees and, with their own men, pick, pack, and ship them to market. They got the apples in barrels to the freight station and there they stood without adequate cover and means to keep the temperature low enough, and, in waiting for cars, spoiled.

Producing Districts.—If, in a certain locality, the soil and climate are found to be particularly adapted to some certain crop, that locality has a very strong tendency to become a grower of that crop as its chief, if not, indeed, its exclusive, money crop. All of the factors so far considered tend to augment this tendency. The uncertainties as to what to plant are much reduced when the crop itself is decided upon and when the neighbors have all become quite *bona fide* experts on all phases of this particular crop's growing and marketing.

It is less difficult to get good help, there is less personal experimentation required to find out the proper equipment, and, finally, shipping difficulties and market difficulties are much reduced where many of the neighbors have a common interest. The advantages of a crop common to a district are so great that most districts so blessed are fast becoming more prosperous, more extensive, and more thickly populated; while in districts not thus organized the individual farmer is commonly not much more than holding his own.

Farmers' Associations.—Farmers have long had associations, such as the grange, but in the districts where the producers are not bound together by a common chief crop, these associations have not in general attained the business significance and organization of the single crop districts. Under various names—Farmers' Exchange, Truck Growers' Association, Fruit Growers' Association, Potato Growers' Association, etc.—these latter furnish the farmers means to buy collectively in quantity to advantage; means to combine for better shipping facilities; means to secure information of market conditions, and in some cases they hire agents who follow up shipments and who, one or more at each market, inspect the goods on arrival, report

on their condition, on market sales, etc., and thus prevent loss through delay or speculations in transit or improper reports of conditions or sales by the commission men.

Some of the associations establish standards whereby to grade and size the crop; establish and operate packing houses; originate or determine the size and shape of the package or containers in which shipment is made; establish and advertise marks and trade names. Some hold auctions of the products grown by the members of their association and in this way market the products of their members.

Canning and Other Preserving Establishments.—In many of those special districts whose chief crops are certain of the "perishable" foodstuffs, canning or other preserving factories have been established. Where the district is within easy shipping distance of market these take the unshipped surplus and also some which is grown with intent to sell to them.

In remote districts the uncertainties attending marketing are somewhat relieved for the producer by these establishments, which, while they take a risk as to the market's later conditions, have a long season in which to dispose of their product.

Canneries are thus decidedly advantageous means to the producer of spreading the glut of a short season over months of shortage of supply and of eliminating the losses due to spoilage in transportation.

There are some canneries run coöperatively by the producers, but most are run by independent operators, who market either under their own brands or under the brands of one or more of the wholesale grocery houses, or both.

Most of the foodstuffs especially considered thus far have been those which, after leaving the producer, require no treatment that the ordinary consumer is not prepared to give.

Grains, animals, some animal products, and a few other foodstuffs have, however, to be given special preparation.

So far as possible the factories doing this preparation have located along the traffic lines leading from the districts which produce these articles to the consuming centers.

Grain is grown most largely on the newer grounds. As soon as threshed it used to be hauled to the railroads and shipped to the big elevators for storage. This was done because the farmers needed the money; because their roads became impassable after a while; because they had no bins or other places of their own in which to store, and because there were no local elevators.

The effects of handling so much grain at once was depressing on the grain market, disturbing to the money market, and the cause of car shortage to the railroads.

Then, as now, speculators bought grain while it was standing and advanced money on it.

But their grain had to be moved at the same time as the farmer's on account of the wagon roads.

The local elevators, better wagon roads, to the improvement of which the railroads have contributed, and the growing practice among the farmers of holding their own grain for better market prices have steadied the marketing of grain.

Local elevators were largely established by large dealers, one of whom would operate a string of elevators. Here the grain was sampled, measured, and stored. Payment was made partly in cash, partly in supplies of all sorts, thus giving the elevator man a profit both as a buyer and as a seller.

A considerable number of coöperative elevators or farmer's elevators are now in operation.

Since the milling and consumption of the grain extend anyway throughout the whole year there is for the bulk of this crop plenty of time which may as well be spent in transportation as in elevator storage. Cheap transportation, like canal-boat

transportation, would, therefore, be ideal for the grain from all but the northern grain fields, which latter might not be able to get through before ice closed the canals.

Of the principal grains, wheat, corn, oats, rye, barley and rice, wheat and oats are those mostly handled for city consumption, oats in the whole grain for horses and wheat in the form of flour for human consumption.

The manufacture of flour has come to be largely controlled by several large combinations of flour mills advantageously located along the routes from the wheat producing districts to the consuming districts.

At the points where these large flour mills are located grain, shipped as such from the elevators nearer the wheat fields to a final destination in some consuming or exporting center, may, by a very special arrangement made by these mills with the railroads, be stopped at the mills, ground into flour, and continue to its destination as flour, although only paying a through rate as grain. This special privilege, known as "milling-in-transit," is, of course, a rebate of very great advantage to the places which have it, for the through grain rate is always much less than the sum of the grain rates which together would cover the same distance, and the rate on grain is less than the rate on flour.

In this business New York City at the present time occupies a position of comparative insignificance.

Meat.—Of the various animals used as a source of the meat supply some have been already used to give rise to other crops and are only slaughtered at that point of their existence when the aggregate profits of the crops which they produce, which is probably still increasing, combined with the aggregate profit on their increase of weight, which is diminishing because the quality grows poorer with age, is a maximum.

Others are grown expressly for slaughtering; still others are produced only as an unavoidable step in the production of this other crop; still others are wild animals.

The perishability of the crop produced by the animals tends to determine the locality in which the animals are grown.

Thus beef cattle of the large herds used to supply New York City with milk have to be within milk haulage distances of the city, while fowl and sheep are not specially limited by their eggs or wool.

Those raised expressly for slaughtering are apt to be raised where markets are not convenient for those other than forage crops to which the district is suited. Thus hogs are raised extensively in the corn belt.

In general the animal which is a big producer of a crop has not the form and quality which make it the best meat. Also this economic slaughtering age is considerably past the time when the animal's meat is at its best.

For these reasons animals grown expressly for meat almost always produce better meat.

Grass-fed horned cattle from the western ranges have largely disappeared from the market and no extensive move to replace the deficiency by other cattle grown expressly for meat has yet developed. Consequently the supply is largely from milk kine, often much beyond the economic age, and fattened up to kill. Cattle which will make good tender beef are harder to get, and the price of beef has consequently risen higher than the influence of the increased cost of all feed on animals would otherwise justify.

In the milk districts, calves not being felt to be very profitable, are commonly killed at as early an age as will permit their flesh to be used and often earlier.

For this reason the outlook for an early improvement of the beef situation is not good. The point is rapidly being neared, however, when it will pay to raise for

slaughter horned cattle having shape and weight assuming characteristics which will make them ready to market at an early age.

What has been said of cows can similarly be said of chickens. Ducks and geese are generally raised expressly to kill.

Swine and sheep have increased in price but somewhat more nearly in proportion to the advance on the costs of all feed.

The killing, dressing, and wholesale marketing of animals, except fowl, have largely gotten into the hands of a few large concerns. These collect animals to some convenient central point and there kill and dress in very large quantities, economizing in all ways on labor and letting nothing go to waste. They often own the refrigerator cars in which the carcasses are shipped to their branch houses in the various markets for sale.

Of sheep and swine they can generally furnish sufficient prime meat, but of beef the demand exceeds the supply.

The producing area by which New York City is served is very widespread when all foodstuffs are considered.

For instance, wheat and oats from Texas, British Columbia, and Canada, Montana, and some from the Eastern States; potatoes from Bermuda, the Gulf States, the Eastern States, including Maine and Nova Scotia, and, in time of shortage, from abroad; apples, from Oregon, Washington, Missouri, California, the Great Lakes' district, Nova Scotia, and the whole eastern seaboard; peaches, grapes, and other deciduous fruits, from Georgia, Maryland, Delaware, California, the Great Lakes district, New Jersey, New York, Connecticut; citrous fruits from Florida, Cuba, Porto Rico, California; vegetables of all sorts from the Gulf States, Florida to Texas, North Carolina.

Favoring soils and climates, the development of special crop districts, and, in the case of the Southern States, the ability to secure plentiful labor at very low prices and cheap transportation have combined to extend the limits of the producing area and this tendency has been carefully fostered by the big transportation companies, who are desirous of this lucrative long haul business.

It would be natural to expect that, where climate and soil made it possible, the "most perishable" crops would be produced nearest to the consuming center. Around New York City this used to be so, but with the increasing difficulty of securing efficient farm help, except at prohibitive prices, with the increase in value of land, with the subdivision of farms into city lots and suburban plots within teaming distances of the market, and with the competition of stuff from the South, this has grown less profitable for the former American truck farmer. Where he has been supplanted at all it has generally been by some foreigner, who, with a large working family and with ability to secure the services of some of his more recently immigrated countrymen, can profitably give the ground intensive cultivation.

Nevertheless there are large areas of good farming land lying entirely idle within hauling distances of the city markets; and other large areas are devoted to "perishable" or "non-perishable" crops, rather than to "most perishable."

These lands are possibilities which may at any time come into use, and when they do their crops will add materially to the present bulk of the vehicular market traffic.

The quantity of any generally desirable article which the population of a place will consume depends very largely upon the price at which a desirable quality can be bought. Low prices stimulate consumption, but only of the pleasant or generally desirable articles. No matter how low the prices of turnips became, the human consumption thereof would not be increased more than a small amount, unless other foodstuffs became prohibitively high priced, not relatively, but absolutely.

But an overproduction or an oversupply to a market does not mean a stimulated demand because the retailers do not permit the low prices to reach the consumers.

Consumers can read and can hear of apples rotting in the orchards within a few miles of market, because the market price will not pay the expenses of barreling and shipping; can see market quotations of apples at \$1.50 to \$2.00 per barrel, onions at 50 cents to 60 cents per bushel, etc., etc., but, nevertheless, the retail price of either stays at from 10 cents to 15 cents per quart until the consumers finally come to feel that they are all under some horrible spell which keeps them permanently separated from the bounty of the earth.

If, then, man is foolish enough to plant too much of a certain foodstuff of which nature is overbountiful, what becomes of the oversupply?

If it is available for conversion profitably into other forms of saleable goods and the means for such conversion are available, a considerable part of it is so converted. If not, it may be put to debased uses or else merely allowed to waste. The wise producer will not expend the costs of packing and shipping on goods for a glutted market. He keeps them under his immediate control and, if they rot, their remains are of some little value to him as fertilizer. When a market gets glutted to the point that commission men and other receivers have no place to store the excess of receipts over sales, so that they no longer remove these goods from the railroads and other transportation companies, in self-preservation the transportation companies have to discontinue the movement into their termini of these goods.

A bumper crop thus often means additional fertility drawn from the producer's soil, additional labor in cultivating and harvesting, additional expense in transportation and very often not as much gross returns as from a smaller crop.

Many of the shrewder agriculturists sense this and begin to decry the efforts made by agricultural educational institutions in favor of increased yields per acre.

The Consumer.—Consumers are not necessarily the extremes of short-sightedness, illogicality, and waste which some would have them thought.

There is a reason for many, if not most, of their ways of marketing, and, until these reasons change, their purchasing methods will probably remain the same.

All but a very few people desire to live comfortably and to give, as is wise, the most of their care and attention to the things which are of most importance to them. They do not desire to spend more time or effort on details than is warranted by the relative importance to them of such details and also by the apparent possibility of easily effecting a change therein to their benefit. Where they cannot gain they desire freedom to enjoy.

Most people are overrun with demands upon their attention, time, and money, each demand coupled with its promise of gain or saving of some sort. In these some truth is apt to be strangely mixed with much fiction, and the means for separating the false from the good are not available to most people. Very often the amount which apparently could be gained or saved is not sufficient to warrant the diversion of the required attention and energy from the main income producing source of the individual. Also there is a very prevalent skepticism born of past bad experience as to the active and unperturbed continuance of any movement for the benefit of the public.

Taken together these reasons perhaps explain considerable part of the inertia of the populace toward proposed methods of improving known bad conditions.

For the vast majority of people it is necessary that their incomes shall, on the average, at least equal their expenses. Their ways of accomplishing this desirable result differentiate people into two kinds, whose attitude toward marketing will be quite different.

First, Those people who, to keep their incomes at least equal to their expenditures, concentrate their energies upon increasing their incomes and pay little attention to the savings which might be effected by economy.

Second, Those people who, having less opportunity to increase their incomes, seek

to keep the balance in the face of some perhaps unavoidably increased expenses by the reduction of other expenses.

These two kinds of people are not clearly separated by the amounts of wealth possessed; or by the size of income or even by the character of neighborhood inhabited. Nationality and previous training do make for a distinction.

Those of the first kind commonly feel that the element of chance plays a very important part in this matter of increase of income. And chance is often believed to be specially favorably inclined toward those who spend most lavishly and ostentatiously. Consequently these people are generally not close buyers and are generally, if not indifferent to the costs of living, at least not liable to be actively interested in movements for the reduction of these costs.

Economies, then, are especially interesting only to those who have not so much chance of increasing their incomes rapidly; and these, the people of the second kind, as above differentiated, are the ones from whom the steady and loyal support of a program for the reduction of useless marketing costs must come.

But, while those of the first kind cannot be depended upon for steady support, they, as well as those of the second kind, may flash into anger over some plainly evident increase in foodstuff prices.

People have mental standards of what things should cost—impressions gained mostly long ago and modified slowly and, usually, very unwillingly, unless under complete change of environment. When these personal mental price standards for any commodity whatever are grossly exceeded in general, anger and antagonism result, and each new advance provokes new indignation. This occurs just the same whether the additional cost is merely to be transmitted to others or whether it causes personal loss. A principle is felt to have been violated—things should not cost such a price.

With people of the second kind every new increase in living costs usually means either a reduction in the moneys available for pleasure and for savings or else a lowering of the plane of living.

Since the physical and mental vigor of a people are so directly dependent upon the wholesomeness of their food it is tremendously important that the costs of food should be kept from rising—so far as the elimination of needless expenses and uncertainties in marketing will do this.

With the increase of population in and about this city opportunities for such increases of income as will permit disregard of economies become less frequent, and the people of the second kind are increasing the numerical majority which they have always had in the city's population.

Of the total expenditures for every reason of a household the first cost of the foodstuffs forms a considerable proportion, varying from perhaps somewhat over one-half in the case of the very poor to possibly one-sixth in the case of the fairly well to do.

To the bulk of the people of the second kind, then, the cost of foodstuffs is of relatively more importance than to those of the first kind; and the time of the person who does the buying is also apt to be considered not so valuable.

Those of the second kind, then, are the people who "shop" for low prices.

The bulk of the buying for home consumption is done by the women; and their training has not always been such as to make them extremely analytical of the causes of final total costs.

When, therefore, a woman, especially one of the first kind, finds her neighbor receiving from a retailer favors, such as specially quick delivery of a small order or long credit or gifts at certain seasons, etc., she is apt in a desire for equal treatment to require the same quite oblivious of the increase of costs which must follow the general adoption of such requirements.

Of many things the consumer must buy in small quantity at a time, because of the lack of proper storage space and often because of lack at any one time of a sufficient accumulation of money or credit to invest in a large quantity.

This small buying, while of itself wasteful, is, from other viewpoints, advantageous.

1st. Because foodstuffs require considerable care and effort to prevent their spoiling, even when kept under good storage conditions.

2d. Because in an ordinary household, when a large stock of any article is on hand, the consumption of that article is greatly increased without a corresponding decrease in the consumption of other foodstuffs. The mere presence of quantity provokes increased consumption.

People of the second kind are again divisible into two sorts—those who exercise foresight by buying in advance of needs, by buying in quantity, or by buying co-operatively; and those who buy only when and as the necessity demands, making perhaps as good a bargain as can be made in the neighborhood at that time. These latter are generally necessarily local buyers, for the sake of economy of time, car fare, and 'phone expense.

Purchasers who pay cash can, of course, buy anywhere, but there is very often a distinctly inferior treatment accorded to the cash customer, manifesting itself in a less courteous tone in the store, in slower delivery service, and in a less obliging attitude toward rectification of errors or misunderstandings.

This is all perfectly logical from the retailer's point of view.

Also, where goods are sent C. O. D., either the purchaser or some obliging neighbor must be at home to pay for the goods whenever they come.

For all these reasons many of even those who would otherwise prefer to pay cash buy on credit.

The consumer commonly does not bargain, but buys at the price set or else leaves it. Even those people of Oriental extraction, who are naturally bargainers, after residing here a while acquiesce in this fixed price custom.

In all buying a knowledge of the goods and of the day is essential to economical buying.

At the same time in different stores in the same neighborhood prices vary on the identical article. The variation, while only perhaps a cent or a few cents, is quite a large percentage of the cost. Some stores in the same locality, because of a difference in general appearance, cleanliness, courtesy, convenience of location, etc., and sometimes better quality of goods, secure the trade of those of the neighborhood with whom these things outweigh consideration of price, and these stores generally charge a somewhat higher scale of prices throughout.

However, in any one grade of store in the neighborhood prices are apt to be so adjusted that, for the goods commonly bought at one time by a consumer, the total price will appear to average about the same.

Careful buyers get to know that certain retailers are invariably high priced on certain goods and low priced perhaps on others, and they govern their purchasing accordingly.

Cash buyers prefer, of course, to shop where stores are plentiful and close together. They seem to be willing to walk four or five blocks and consequently in thickly settled districts a business or shopping street is found within this distance of most points. In each large district some portion of one of these business streets, due generally to some concentration of traffic facilities, becomes an important shopping center.

At each of these centers there are generally found large cash stores who handle the less perishable foodstuffs, and often cold storage stuffs as well, in greater variety and generally at lower prices than can be gotten in the local stores. They

usually secure considerably larger single orders than do the local stores because of their generally lower prices, which are often still further reduced for purchases in quantity, and also because their customers are drawn largely from either the large consumers or the more foresighted ones of the population who have visited this center to purchase materials other than foodstuffs.

Cleanliness in the handling of foodstuffs is very frequently a determining cause with consumers as to where they will trade, as in lesser degree are also courtesy and promptness.

From the foregoing it may be seen that the price of goods is only one of several considerations affecting their sale, and that the various considerations have quite different degrees of importance to these different kinds and sorts of people.

Even those who must pay considerable attention to price become relatively apathetic when the purchase is of some not very expensive article, a little of which lasts them a long time.

So that the main savings to the people would naturally be on the foodstuffs which are consumed by the individual in considerable quantity.

The consumer seems decidedly to prefer goods which have not been handled or exposed in such a way as to make their cleanliness uncertain; especially in such goods as can not be again cleansed before consumption. These, except when bought in places whose cleanliness is plainly apparent, are preferred when already put up in packages under assured sanitary conditions, even though these cost more.

Consumers are frequently led by skillfully planned and unstintedly conducted advertising campaigns to try and sometimes to continue to use various foodstuffs, generally of a specially prepared form. Early training, the advice of some of the medical profession, and the results of not unfavorable experience may combine with continuous advertising cunningly devised to cause people to continue to use some of these proprietary foodstuffs. But in general an advertising campaign only secures for an article a trial and, if not found especially pleasing in all respects, it is apt to be succeeded by the next strongly advertised article for the same purpose.

As pointed out under the heading of Foodstuffs in General very considerable reductions in the price of stuffs can be effected by that elimination of selling and advertising expense which can be made possible by a proper basis of comparison in a popularly understandable and available form.

Premiums.—As between two makes of goods of nearly or quite equal merit from the consumer's standpoint and of nearly or quite equal price, a gift or premium given with one is commonly sufficient reason for deciding thereon, while, if the actual value of the premium given was deducted from the price, it probably would not cause a sufficient price difference to influence the decision. Premiums have taken very many different forms, and may perhaps be justified where trade agreements or reasons of expediency forbid the cutting of cash prices. In any case, however, they merely serve to befog what should be a clearly evident relation between price paid and value received.

Coöperative Buying.—Perhaps the earliest form of coöperation has been where a number of neighbors have combined in the purchase of some one article desired by each in sufficient quantity to make economy in buying of importance, and which could be bought to better advantage in large quantity.

Among fair minded people who know the amount of effort actually required to purchase, properly apportion, collect the payment money from each of the co-operators and settle the account, and know further what is a fair compensation therefor, this type of coöperation works satisfactorily; elsewhere not always so.

Consumers have a diversity of tastes and of ideas of proper prices, and there is a diversity of modifications and grades of each of the various foodstuffs to meet these tastes and price ideas.

No single store, not even the largest, attempts to carry all of the modifications of each article which are on the market. If the consumer is not suited with what the store has and is not willing to be convinced that something in stock will perhaps serve as well as the modification desired, or that the desired modification is no longer procurable, the would-be purchaser may try elsewhere.

In that simple form of coöperative buying wherein orders for non-perishable goods are solicited, the goods bought and delivered, the moneys collected, and the bills paid in general only a few modifications or grades of each article are possible, if the quantities of each are to be sufficient to make up a wholesale order.

This curtailment of choice, in addition to all those other factors which generally influence consumers to buy in small quantities, has in some cases proved sufficient to overbalance the advantages derived, and has finally caused the abandonment of the projects.

The type of coöperative buying for small wants which has proved most successful will be described under The Retailer, as it is really a coöperative store.

As is to be expected, the native American is more given to trying to advance himself materially by watching for his opportunity than by saving on his expenses; and the foreign born, especially from those countries where coöperative stores are vast and successful businesses, and where people are used to close living, is more given to coöperation.

In general people of the first kind do not coöperate well; those of the second kind, when the advantages and the possibilities of success are brought plainly to their minds, have a tendency to coöperate.

The consumer does not know the costs of the various operations of retailing. He or she does not know how much could be saved if the order were delivered at the store instead of to a clerk sent around to collect orders; if the goods be purchased in quantity instead of a small amount of each; if the whole order at one time be large instead of small; if the goods be by him or her carried home instead of delivered by the retailer's wagon; if cash or prompt short credit be used instead of long credit; nor does he or she care much at the present time.

It would be a very exceptional retailer who knew the costs of these details himself and a still more exceptional one who, knowing, would permit his customers to know or to benefit in anything like direct proportion to the savings they actually made.

The consumer knows almost nothing with a knowledge as well founded as has the cattle raiser, of the qualities and feeding value of his human foodstuffs. He or she is swayed by customs; by tastes, which may be natural or may be grossly perverted; by prejudices skillfully created and carefully maintained by those who benefit, not by foodstuffs in their natural condition, but by proprietary preparations and modifications thereof.

These things are part of the marketing and provisioning problem mainly because a considerable portion of the public to-day evinces a desire for more education along these lines and with the better knowledge there will tend to come considerable changes in foodstuffs, their preparations, and marketing.

Foodstuffs in General.—The statistics of the Bureau of the Census show that, while there has been a small increase (9.9 per cent.) during the past ten years in the acreage under cultivation throughout the United States, the increase in the value of the farm products has been very much greater (83 per cent.). And, further, that the increase in acreage (9.9 per cent.) is not as great as the increase in population (21 per cent.).

This increase in value is mostly due to an increase in prices of 66 per cent. It is to be expected, therefore, that the producers' selling prices for foodstuffs will for some time to come tend to continue to increase.

Part of this increase in the prices of farm products may be due to the relation

of demand to supply; part to the higher cost and scarcity at any price of farm labor, but undoubtedly a considerable part of it is due to that change which is replacing the old type of hardworking, self-sacrificing, unrewarded farmer by the modern business farmer, who realizes the strength of his position and insists upon a profit from his labors.

Competition for a livelihood among the workers of the big cities becomes keener and still keener as time goes on. If this competition is not to take the disastrous course which it has so largely taken in England during the past many years of robbing the workers of their vitality and energy, foodstuffs of quality to enable the workers not only to hold their own, but to advance by increasing their abilities, must be provided at prices which they can afford.

The foodstuffs (whether meats, fish, milk, fruit, vegetables or cereals) should be free from those diseases harmful to man's efficiency to which each is subject, and the quality, as regards tenderness and digestibility, should be adapted to the individual as governed by the activity of his or her occupation and way of living.

The occupations and the ways of living of the majority of city workers are increasingly sedentary, due to the more widespread adoption of labor saving devices of many kinds. Thus not only clerks and many others commonly considered as leading sedentary lives, but many factory and shop workers, whose physical labors have been purposely so restricted that they do little more than watch or feed machines, are really leading inactive lives. As a matter of well established fact, the average individual, when using all parts of his body actively under good conditions of air and light, is able to extract the nutrition necessary to his upkeep and growth from coarser, tougher, less highly organized, and, therefore, cheaper foodstuffs than can the average individual when not so healthily occupied.

For these reasons the foodstuffs used by the city dweller should be of increasingly good quality.

The individual purchaser can only protect himself to the extent of refusing to buy the unsuitable. The exercise of the firmness to do even this requires a degree of knowledge of the quality of food and its effects not too general among city dwellers.

It is unfortunate that the poorest of the workers—those who most need physical and mental upbuilding to help them to improve their own conditions—are precisely the ones who are tempted the most by low prices to buy the poorest quality of foodstuffs.

It is also unfortunately the fact that foodstuffs which, because of poor quality, can be bought cheaply by the retailer will, to a very considerable extent, except in the fancy trade, replace better grades of the same stuffs if the poor grades are in plentiful supply. Thus, while they are available, windfalls will often keep hand-picked apples off of the grocers' stands completely. Even if more of the healthy apple substance (after the diseased portions were removed) could be gotten for a certain price in windfalls than in hand-picked apples, which is generally not the case, there would still remain the constant danger to the health that the diseased portions may not be removed by the consumer. Bruised spots are not necessarily dangerous if properly removed; but the fungous growths which usually develop quickly in the bruised spots and the chemical substances produced by them often are.

Instances can easily be multiplied on this point.

While, from some points of view, it may seem that the control of the food materials should be left to a single inspection, occurring when the goods are retailed, it is safe to say that if many retailers did secure supplies of such inferior foods they would manage to sell them.

For these reasons it seems proper that an adequate inspection and control should

be exercised after the arrival of the goods at market and before they have been put on sale to the retailer.

Staple articles of different origin as regards production or manufacture which, as marketed, are easily comparable, are generally sold at low prices, largely as a result of such easy comparability and of the ease of selling such goods. On such goods manufacturing or production costs are kept low, advertising expense almost or quite eliminated, and a smaller margin of gross profit allowed to the retailer. While the apparent profit is less the actual profit is often as much as on some of the special articles, due to the lesser time spent in selling the goods.

Articles not so comparable, due to either differences in the quality, flavor, or, very often, only in the package, are the subjects of expensive advertising, tending to create prejudices for these goods.

Standards which would portray to the buying public the actual relative values of such goods would certainly relieve the public from the necessity of individually guessing at, or by purchase and trial arriving at in a very rough way, a judgment as to comparative merits.

The study of a foodstuff sufficient to show the relative value thereof in a practical and easily understandable way is, properly, work for an expert on foods. The cost of such a determination would be greater than a private individual would care to bear, but, if the results were published so as to be available to the general public, the per capita costs would be almost nothing, and the per capita benefits very considerable.

Where the desirable qualities of any article, even if known in their relative importance, are difficult to measure accurately, certain qualities which are more easy to compare are apt to be impressed upon the consumer by the salesman to a degree entirely beyond their merits, and the market demand created in this way reacts to compel the producers or manufacturers to do and to continue to do what they may very well know is not to the consumers' best interests, or sometimes even to their own. This elevation of what salesmen call a "talking point" into a criterion is a natural and easy result of the consumers' ever present desire for an unfailing measure of quality, which can be easily applied on the spot when purchasing. For instance, how many consumers know the various qualities that flour should possess and their relative importance? But all can tell whether it is clear white or has specks in it. And as a consequence flour is made white no matter what other of its qualities suffer. How many can tell by inspection the different varieties of asparagus and know the qualities of each? But all can tell whether the stalks are white or green. New Yorkers have somehow been educated to refuse the green variety, which is often more tender and has often a larger per cent. of its stalk edible than has the white. Other markets insist on the green variety—and so on. This ignorance on the consumer's part is very costly, for often the buyer has no criterion at all except the price, and when in doubt buys the more costly on the assumption that it must be the better.

The remedy probably lies in the same sort of public information already found desirable to make various brands of foodstuffs comparable.

The best statistics available as to the amounts of the various foodstuffs consumed in New York City are given in Table No. 1 of the Report of the Committee on Markets, Prices and Costs of the New York State Food Investigating Committee. According to this \$368,433,449 out of \$644,683,449, or about 57 per cent. of the total amount, was spent for meat, milk, butter, eggs, poultry, and cheese.

Figures from the United States Census Reports for 1900 (which alone seem on this point to be available) show the annual average cost of food for a working-man's family for the North Atlantic Division as \$326.80, of which \$181, or 55 per cent.,

was spent for meats, milk, eggs, and other animal products, thus agreeing with the figures of Table No. 1 quite closely.

Of beef and other meat food products \$176,000,000 approximately, according to Table No. 1, are consumed yearly in New York City. This includes beef, pork, and mutton as its main items.

Taking as an example beef: On the hoof at New York this sold in 1912 for about 9.5 to 10 cents per pound. As meat in the butcher shops in New York City it sold at an average for about 20 cents per pound, according to the retail prices for 1912, published by the Department of Commerce and Labor, it becomes desirable to trace the very considerable difference to see how much could be saved by better marketing methods.

A beef animal weighing 1,080 pounds alive when killed and dressed will weigh about 720 pounds as sold to the retailer. The average price asked wholesale for this meat in 1912 was about 12½ cents per pound for the whole carcass of two sides. Head, feet, and hide not included. This applies to mature beef, not to calves, which are sold differently.

The animal, therefore, cost the slaughterer \$102.60 and for the meat thereof, apart from the heart and liver, \$90.60 was paid by the retailer. The 360 pounds difference in weight covers the head, horns, hide, hoofs, blood, organs, and refuse. Apart from the hide the most of this is of low value per pound and some of it is good only for fertilizer.

This carcass divided into the usual cuts will yield the following weight.

Round.....	170 lbs.	wholesales at .15 per lb.,	retails at .24
Flank.....	40 lbs.	sold with round	
Loin.....	120 lbs.	wholesales at .15 per lb.,	retails at .25½
Rib.....	90 lbs.	wholesales at .15 per lb.,	retails at .20 9-10
Chuck.....	240 lbs.	wholesales at .10 per lb.,	retails at .15½
Plate.....	60 lbs.	wholesales at .06 per lb.,	retails at .12 (assumed)

Included in these and paid for by the retailer are about 10 per cent. of waste in bones and fat, which cannot be sold to the consumer. For the bones the retailer gets nothing, for the fat about 3 cents per pound.

Making allowances for these, the retailer gets for this carcass a total of about \$130. The difference between this and the \$90.60 paid for the carcass is about 31 per cent. of the total selling price to consumer.

As has been shown under the head of the Retailer, this is about what is required in a medium sized butcher shop to cover expenses and a small profit.

The prices made use of were for prime native steer beef, about 3 to 4 years old. Cows, which are generally 6 to 8 years old when killed, sell for from 1 to 2 cents less a pound.

The exportation of beef cattle has diminished greatly, but the production still more so, there being, by the Orange Judd Census 1,800,000 less cattle, other than milch cows, in the country in 1912 than in 1911. It is to be expected, therefore, that the prices of beef will continue to increase.

Somewhat similar conditions hold for pork and mutton, the 1912 shortage on hogs being about 5,000,000 head and for sheep 2,373,000.

The marketing of meats, apart from their retailing, is quite economically managed.

Milk.—Another big item of expense for foodstuffs is milk, for which \$64,000,000 out of a total estimated New York City yearly expenditure of \$644,683,000 is spent. Milk is marketed peculiarly well, in that there is, for the most of it, but one middleman. The big milk companies make contracts with the dairymen to deliver the milk at the railroad stations, and cart it with their own very large trucks to their distributing depots from the railroad delivery points in the city.

Different breeds of cows produce milk of different richness, that is to say, containing different percentages of butter fat. Jerseys produce the best milk and the richest, some of the prize Jerseys yielding not over 19 quarts of milk per day, which 19 quarts contain 1.9 pounds of butter fat (equal to 4.6 per cent.). Holsteins yield perhaps the most, some as high as 50 quarts per day, which 50 quarts contain about 3.8 pounds butter.

Holsteins are larger animals than Jerseys and eat more. These figures are from prize producers, not from ordinary animals and these are maximum daily figures, not averages for the year. The average daily production from these prize producers would be about seven-tenths of this, and the amounts consumed by the calf would make a material further reduction. The ordinary cow averages 5 to 12 quarts of milk per day, and the cost of feed grown, not bought, and labor is variously stated as from 4.16 to 6 cents per quart. (See Farmers' Bulletin 469, U. S. Dept. Agri. The Cost of Market Milks.)

The provisions of the Sanitary Code of the City of New York do not permit milk containing less than 3 per cent. of butter fats to be sold, except as skim milk. It will be seen that the above mentioned Holstein milk contains about 3.8 per cent. fats, although 3.4 per cent. is more common.

Milk is graded "A," "B," or "C," according to its cleanliness as determined by the number of bacteria in a cubic centimeter of milk. The dairies are inspected and the requirements of the Health Department, while adding to the cost of the milk somewhat, are extremely necessary to protect the consumers.

The exchange rate for December, 1912, was $4\frac{1}{2}$ cents per quart for grade "B," $4\frac{3}{4}$ cents per quart for grade "C" within the zone wherein the railroad freight is 26 cents per 40-quart can, and where there are no station charges, making the cost per 40-quart can, F. O. B. N. Y. \$2.11 for grade "B," and \$2 for grade "C."

Grade "B" is the sort of milk sold in bottles to consumers. It costs, therefore about 5 3-10 cents per quart, F. O. B. railroad New York. Figures quoted under the Retailer show that there is a cost of about 2 cents per quart for delivery. The 1 7-10 cents difference between the sum of these and the 9 cents per quart commonly charged consumers has to cover the costs of bottling; cleaning and breakage of bottles; losses of milk in transit; haulage from depot; rent, maintenance, etc., of milk bottling plants; management and profits. This 1 7-10 cents is 19 per cent. on the selling price, and it does not seem at all excessive to cover all these items. At these prices the producer claims not to be receiving enough to pay him any profit and many dairymen are going out of the business. The price to the dairyman will probably have to be advanced by at least a cent a quart and the consumer will probably have to pay the difference. Dipped milk, grade "C," is sold from stores, to be carried away by the consumer, for as low as 6 cents per quart. This is possible due to the elimination of the delivery and bottling expenses and still leaves the retailer almost enough to do business on. At such prices the milk is used as a "leader" for more profitable goods.

The following table from Michel's "Market Dairying" gives a fairly well accepted view of the gross returns to be gotten from 100 pounds of 4 per cent. milk, disposed of in the ways mentioned.

\$1.14	when sold as cheese
1.65	when sold as butter
2.03	when sold as cream
3.25	when <i>retailed</i> as milk
4.57	when sold as ice-cream

Eggs.—Eggs are produced in largest quantity in the spring, and in least quantity in the late winter. More are, of course, consumed when eggs are cheapest in the

spring, but many consumers are quite constant in their demands throughout the year. Means are necessary not only to store enough to average the supply so far as needed and under proper conditions, but also to give the producer some return or loan on his produce until it is sold for consumption. At present these means are furnished by speculators or dealers, who have in most cases neither the cold storage facilities of their own nor sufficient moneys to advance on the eggs that they buy. They hire the cold storage facilities and borrow the money from the banks, all but a small margin which they have to risk of their own money to cover variations in market prices.

These dealers take risk and worry; they also labor some in resorting and crating. They serve a useful purpose as markets are at present constituted, but this same purpose could be served at much less expense by a market so organized that the producer and the banks could get together directly instead of through the speculator or dealer. If proper market standards were made publicly available and goods were required to be packed in accordance with these, the too often haphazard or dishonest packing of the producer would not have to be gone over again by the dealer, thus saving the cost of one packing and of many attendant losses in spoilage and breakage.

Eggs at present are packed in crates containing 30 dozen all of the same grade, and there are at least 20 different grades recognized by dealers, although the consumers seldom know more than four—whites and browns, strictly fresh and storage.

Because of the weight of the crate necessary to stand the handling received, parcels post has been found to be more expensive than express, and because few consumers can use 30 dozen within the time that these will keep fresh, there is little marketing direct of eggs in crate lots.

There has and probably always will be a rather insignificant number marketed in small lots to city consumers directly.

If strictly honest producers shipped strictly graded eggs by express to one of a group of consumers in crates already internally subdivided into packages of, say, 5 dozen eggs each and guaranteed their goods adequately, it is possible that there might some benefit result to both consumer and producer.

Fruits and vegetables have already been considered in a general way.

Canning and Preserving.—Because of that convenience to both consumer and retailer, elsewhere herein pointed out, were it not for a well-founded skepticism on the part of a considerable portion of the consuming public as to the healthfulness of canned goods, there would probably be few fresh foodstuffs of a “semi-perishable” or “perishable” nature retailed.

As it is, the sales of canned goods have increased to enormous proportions.

The methods of processing, etc., are in general not controlled by patent and, as a consequence, all sorts of people, from the producer who runs a small plant for his own surplus to the manufacturer who has hundreds of employees, puts up canned goods.

To secure a first-class product without using preservatives it is necessary to have the foodstuffs which are to be canned free from decay, and to compete with other canners it is necessary to have low labor costs and other expenses low as well.

Labor costs can be kept low either by hiring cheap labor or by using machinery or other labor-saving devices. But machinery to be most profitable requires constant use; and this it is impossible to get with perishable foodstuffs which all ripen during a short season in the year.

Those manufacturers who can bottle or otherwise preserve and market cold storage or “non-perishable” foodstuffs work under a condition where machinery helps very much. They, accordingly, have well-equipped factories and, even when

paying their help fairly decent wages, are able to produce their product at fairly low prices.

Establishments which can fruits or vegetables of a "semi-perishable" or "perishable" sort must, in general, locate in a producing district; must make contracts in advance for their supplies of the raw foodstuffs, cannot afford to employ much except very simple machinery, and have to hire large amounts of very low priced labor, which they work long hours and for a short season in the year. Their locations in general give them advantage for all of these things. Keeping in mind that the comfort-and-living-purchasing value of a dollar varies considerably in different parts of this country and that in few places has a dollar less purchasing value than in New York City, it will be seen that New York City is a poor place for those requiring large amounts of cheap labor of a sort easily procurable in remote districts.

Against all these disadvantages, New York City has this strong advantage to offer: That, as its markets are at present constituted, there are available for canning purposes the surplus "semi-perishable" or "perishable" fruits and vegetables from very many different producing districts, which, by arriving at different times, give a nearly continuous supply of work so that labor-saving machinery and skillful, fairly paid operators are warranted and are used.

It seems, therefore, that under present provisioning arrangements a canning factory as a means of absorbing surplus which would otherwise go to waste or bring very small prices, would be a desirable adjunct to a market; but that under the better ordered provisioning of the city's markets which is desired it seems doubtful that there would arrive at market quantities sufficiently in excess of what the market would absorb to keep a canning establishment running on fresh fruits and vegetables. And, as to permitting such an establishment to cull over and can the better portions of foodstuffs condemned as unfit for sale because of their stale or damaged condition, it would seem to be offering it too great a temptation for the safety of the health of the public.

The Retailer.—Practically all food supplies for human consumption are handled by the most complete retail stores of either one of two classes—grocers and butchers. The most frequent subdivisions of the complete grocery business are:

The dry grocer, retailing everything except perishable goods.

The green grocer or vegetable and fruit dealer.

The butter and egg dealer.

The tea and coffee dealer.

The dairy product or milk depot.

But the complete grocery selling all articles of food supply except fresh meats and fresh fish is by far the most common.

The complete butcher business retails all meats, fresh or salt, which are not canned, and all sorts of fresh fish and shellfish.

It is sometimes narrowed down to the selling of pork and pork products exclusively, and sometimes also to fish of all sorts.

There are various combinations of grocer and butcher, viz.:

(a) The complete market, combining the functions of the complete grocer and complete butcher, where anything in foodstuffs can be bought.

(b) A combination of dry grocer and butcher, such as is found in some department stores.

(c) A combination of green grocer and butcher, such as is found under one roof in many butcher shops.

Forming a third of the large classes are those stores which sell foods freshly cooked, but not served to be eaten on the premises.

These include delicatessen stores, rotisseries and bakeries.

Cash v. Credit.—All retail stores may again be divided into those who sell for cash only and those who sell for cash or on credit.

It has, in all retail selling, been found necessary to the quick despatch of business that on every article a fixed price be set and maintained. Attempts have been made in stores selling on credit to have two prices, one for cash and one for credit customers. But credit customers have always resented this so strongly that this has been abandoned. So far as known, retailers have not put into force the ordinary commercial discount of 2 per cent. 10 days, net cash 30 days; probably because the few cents on the ordinary consumer's weekly bill would not prove very attractive.

Prices necessarily average higher in stores of like location and character, selling on credit than in those selling for cash.

Although the capital required is greater and the risk and loss from bad debts more many retailers prefer to sell on credit. Their customers are more localized, more loyal, freer buying in quantity, and not so insistent that each article shall be a bargain in point of price. They can thus avoid considerable advertising expense and can spare themselves the trouble of constant bargain hunting in the markets.

The two classes of stores are probably necessary—the one for those customers who value their time and convenience more than the savings to be effected, and the other for those who make the savings paramount.

There is often a marked difference in the courtesy and even in the character of the help between credit and cash stores in favor of the former. This in itself is a considerable incentive to refined persons to deal at the credit stores.

Any retailer has the following operations to perform:

- (a) Purchase his wares at wholesale and have them delivered.
- (b) Arrange them to suitably exhibit to customers.
- (c) Attract the customers.
- (d) Sell the goods.
- (e) Assemble or cut off in required amounts the goods forming an order.
- (f) Make out and render the bills.
- (g) Deliver the goods.
- (h) Rectify mistakes.
- (i) Collect the moneys due.
- (j) Do the accounting.
- (k) Keep the store clean.
- (l) Store, pick over, and care for such perishable goods as are bought in greater quantity than can be sold in one day.
- (m) The various operations above enumerated may be done separately or more than one at a time by the same person.

(a) *Purchasing.*—This is generally attended to by the proprietor or by some officer of the company delegated because of special fitness.

Green groceries are bought in market; dry groceries from manufacturers or jobbers.

Some of the less perishable of the green groceries are now bought by sample from jobbers or agents by the retailer in his own store. Retailers do a considerable buying in this way, basing their price bargaining upon prices and price tendencies in recent markets by them attended and upon offers from other jobbers who have visited them.

In dry grocery buying this purchasing in the retailer's own store from visiting salesmen of the wholesale grocers and from manufacturers' agents is quite the usual thing. The retailer may visit several of the wholesale houses once in a while to keep in touch with prices and qualities, but he can keep pretty well posted from the salesmen of the various houses who come offering similar lines of goods. These carry samples sometimes, but often only give verbal descriptions based on personal

knowledge of the goods and quote prices. Goods are shipped on account, subject to approval and are generally received, if returned, without any unpleasantness whatever. Sales are generally on 30 days net cash, 2 per cent. 10 days, delivered generally free by the wholesalers' trucks within the city limits.

Manufacturers' agents are more apt to carry samples showing the goods and illustrations or actual packages showing the appearance, sizes, etc.

Butchers generally go to market in person and select or try to select desirable carcasses.

Except where, as in the case of fowl, the requirements of a certain religion have been allowed to give rise to exceptions, butchers are not permitted to slaughter within the city limits.

In all other cases slaughtering is done either by a few licensed slaughtering concerns within the city or else out of the city.

As considerable knowledge and ability are required to select the most advantageous carcasses for retailing, butchers generally attend personally to their purchasing. The largest part of this purchasing is done in the early morning, largely, perhaps, because the work of retailing is lighter at that time than later in the day. The retailer in this case necessarily has cold storage facilities of his own and generally these are adequate to hold several days' supplies. He does not, therefore, have to purchase a day's supply at a time. He thus saves on time spent in marketing and on delivery costs, and also tends to secure the better price which a large purchaser generally gets.

The wholesale price of like qualities of meats in like quantities is almost uniformly the same at any one time throughout the city. And the quantity of meats which the public uses per day is pretty well known and only this quantity is placed on the market. The wholesale dressed meat market is thus, through the domination of a few large concerns, so controlled and steadied as to be largely free from those shortages and glut which make the produce market so unsteady. Quite apart from the question of the advantage or disadvantage of this to the consumer it certainly saves time and effort to the retailer, who can thus trade at the nearest wholesaler's with fair assurance that no competitor is, by underbuying, enabled to undersell him and still have a normal profit.

Meats are frequently delivered by the wholesaler's trucks, but many butchers do still go to market in their own wagons, especially where very prompt receipt of the goods is required.

Fish and fowl similarly are bought in market by the retailers. Commission men, acting either as receivers for shippers or as owners, used to do a large business in killed fowl. Since this has come under the domination of the large packers the quality and condition throughout the barrel or other package has become much more uniform and dependable.

Eggs are sold wholesale by crates, all in a crate being of the same grade.

Since these grades are uniform and pretty well understood by the retailers, they do not need to visit the market to inspect these goods when purchasing. The eggs are held in cold storage and are sold by quotations.

Butter and cheese are also pretty well standardized.

When bought from commission houses eggs, butter, and cheese are perhaps most usually brought from the wholesale district to the retailers either in the retailer's own wagon or else by public truckmen or expressmen.

There are a number of articles, such as canned goods of all sorts, dried fruits of all sorts, nuts, honey, table oils, etc., which are wholesaled both by the wholesale grocery houses and also by special dealers in these articles.

Some retailers seem satisfied that the wholesale grocers have as good goods at as fair prices as can be gotten; others prefer to shop among these special dealers.

Canned goods fluctuate in wholesale price considerably and both because they are used in much larger quantity than the other articles above mentioned and because of this fluctuation in price more attention is usually given to their purchasing.

Milk, excepting that rather small portion of the whole which is retailed by the grocery stores and by the restaurants is marketed peculiarly in this, that the wholesaler is also the retailer, the large companies buying direct from the farmers and selling and delivering directly to the consumers.

Cash stores are constantly on the hunt for bargains. They buy close, often in very large quantities and for cash. They are thus able to profit by the needs of producers or manufacturers who get into financial difficulties.

Credit stores, on the other hand, do not in general display such sharp buying ability, nor have they so often the cash on hand with which to seize upon any opportunities which may offer.

Many of these buy from the wholesalers on 30 days' time.

(b) *Arrangement of Goods.*—Consumers frequently do not know what to purchase to satisfy their own wants and, in fact, often do not know what they want. Goods, properly displayed, act suggestively on these people, causing them to formulate their wants and thus greatly reduce the work of selling. The amount of thought, labor, and expense put upon this display increases with the quality and expensiveness of the store.

Goods which as bought are packed in containers of such size as the consumer will buy can be displayed in these containers and thus save a rehandling of these goods, piece by piece.

This work is one on which the wise retailer constantly employs all the otherwise unoccupied time of his sales force. It is, accordingly, very difficult to secure any figures covering this item.

(c) *Attract the Customers.*—As has been pointed out, cash stores and credit stores differ quite markedly in the loyalty of their customers. Since the cash stores cater to those who habitually shop for prices, cash stores of necessity advertise considerably and some of them constantly. They are thus forced to know how to get some returns from their advertising. Few of the credit stores make a continuous advertising campaign of any sort and with most of them advertising is an extremely desultory affair. Generally speaking, they do not get results from their advertising, and, while a great many of them could arrange to handle more business if they could get it, and some of them realize plainly how much to their advantage such an increase of business would be, most of them seem to feel hopeless of attracting customers from without a certain small radius, or of keeping much more than their present lead over that competition which is constantly seeking to establish itself near to the successful.

Of the many forms of advertising which might be used, newspaper advertising, window and wagon displays, billboard posters, and advertising in programs seem to be most favored.

Other means besides the direct appeal of advertising are used, such as subscriptions to church affairs, presents to those who can influence orders, etc., as well as such more legitimate means as special courtesy, promptness and cleanliness in the store, convenience of location, good lighting, etc.

Stores generally advertise "leaders," goods marked to be sold below the usual retail price. In some cases they are enabled to do this and still make their expenses by sharp buying, but very often these goods cost as much or more than they sell for.

Figures as to the number of customers waited upon in any one day and the amounts of their purchases are difficult to secure.

The following records from a butcher shop having on all week days except

Saturday two skilled butchers employed waiting on customers and on Saturday one additional butcher. Also two 1-horse wagons daily and on Saturdays one errand boy and one cashier additional:

Monday, June 10, weather hot.....	99	customers
Tuesday, June 11, hot and stormy.....	169	"
Wednesday, June 12, stormy.....	177	"
Thursday, June 13, fair.....	179	"
Friday, June 14, fair.....	137	"
Saturday, June 15, stormy all day.....	407	"
Also,		
Monday, June 17, stormy.....	117	"
Tuesday, June 18, fair.....	205	"
Wednesday, June 19, fair.....	230	"
Thursday, June 20, hot.....	160	"
Friday, June 21, hot.....	111	"
Saturday, June 22, hot.....	471	"

As the average sale to each customer was larger on Saturdays than on the other days it is clear, if by advertising or other means, the number of customers could have been increased on other days this retailer could have made the same profits on a much smaller increase of selling price over cost price.

(d) *Selling the Goods*.—Selling the goods in the store when the customers have been attracted and have been helped toward their decisions by the fixed displays requires, nevertheless, for best results some power of suggestion; an exact knowledge of the goods and of their prices; a decision of character combined with courtesy which enables a customer to quickly reach a decision without feeling hurried; cleanliness, delicacy, honesty, and judgment as to what to promise in the way of deliveries, etc. Stores whose customers are people of importance find salespeople of this sort a necessity. Stores selling poorer people have often less efficient salesmen, especially among their hired help.

Cash stores, especially those who have few regular customers and who, therefore, depend upon advertising to supply them with customers, frequently have salesmen badly lacking in several of these selling requirements, especially in courtesy, delicacy, cleanliness, and honesty.

In many cases this would seem to be as much a matter of lack of ideals and discipline on the part of the management as of individual lack on the part of the salesmen.

Where "leaders" are employed the salesmen are obliged to use their arts and wiles to sell as little as possible of the "leaders" and as much as possible of ordinary priced or high priced goods.

As a part of selling, fixing, or establishing the selling price, is important. A great many items enter into this, not by any exact mathematical process in most cases, but by the relative strength of the hopes and fears they awaken in the price fixer. Prices are fixed as high as the retailer believes he can get and still move the goods sufficiently fast to prevent their spoiling and to keep the volume of sales up to the point which will yield a satisfactory total profit.

A retailer will have his prices higher than his competitors on one article, lower on another. But the articles, due to minor differences, will not always be directly comparable, and for this reason and because the ordinary consumer is not extremely analytical and persistent, retailers do not have a sale only for their low priced goods.

Prices vary by neighborhoods. The retailer who knows the temper of his customers and their price ideals will not reduce prices because the wholesale market price has lowered. He has had the labor and trouble of educating his customers to

a state of resignation to a certain scale of high prices and, as long as the wholesale market price does not increase, he tends to hold his retail prices where they have been. He knows that his customers will spend only about so much for foodstuffs and he has no desire to handle largely increased quantities of goods to get the same gross profit. On the contrary, if the wholesale price is low and the other retailers will act in concert to keep retail prices high, the profits to all of them are much greater. This applies most particularly to articles the prices of which vary most rapidly, and especially to "most perishable" goods. The retailers do act in such concert, not by formulated agreement, but by a common business sense.

(e) *Assemble or Cut-off the Goods, Etc.*—A few retailers have, by giving special care to the putting up of orders when the purchaser is not present to protect his or her interests, established for themselves such good reputations that their customers gladly order in this way. This is of advantage to the retailer, as enabling him to keep his help busy when customers are not in the store, and, in some cases, of permitting cheaper help than salesmen to be used in putting up orders. Also, in some cases, these orders are put up from goods which are not part of the display, but which are held in open stock, thus saving a little expense here.

The majority of retailers have not given this special attention, so that for them the impression holds among consumers that entirely satisfactory treatment can only be secured by having their goods put up in their presence, and, in some cases, only by immediately taking their purchases away with them.

The dissatisfaction is generally with quality and with price, but sometimes with quantity also.

The majority of retailers are at pains to keep the consumer in as complete ignorance as possible of the goods offered for sale. They do this by refusing or giving false or confusing information about comparative qualities, market gradings, comparative value, wholesale prices, etc.

Goods already put up in packages, cartons, or containers are easier and quicker to sell, to put up into orders and to deliver. Retailers prefer them for this reason because there is less spoilage and also because there is no loss of weight such as occurs in making up small quantities from large ones.

Butchers sell in one of two ways, either by meats already cut up into what, in the retailer's judgment, are saleable sized chops, steaks, cuts, etc., as far as possible all of one quality, or else by cutting from the large portions into which for convenience of handling the carcass is divided, such sized steaks, chops, etc., as the customer requires.

Carcasses as bought have on them considerable fat and bone which are of little use to the customer, the amount which would be removed from a steak as cut from a carcass to make an ordinarily well-trimmed steak averaging about 15 per cent. The butchers who trim this before weighing for the customer must ask an apparently higher price than do those who trim after weighing. The bones so trimmed out do not ordinarily bring the butcher anything from the people who collect the same and the fat, which with the carcass cost the butcher perhaps 12 cents per pound, only bring 3 cents. Unskillful cutting may result in including portions of high quality meat with cheaper cuts or in including a disproportionately large share of the good end with the poorer. For these reasons skillful butchers are necessary and their wages add considerably to the expense of retailing.

Cash butchers are apt for the above reasons to sell as much as possible of meats already cut and to weigh them before trimming.

The goods sold have, in any case, to be collected into some container or package for delivery to the consumer. If the goods are to be carried home by the consumer in general, they have to be so wrapped up as to have their identity concealed. If delivered a considerable of this wrapping expense can be avoided. In one case

the expense for paper, twine, or cord, etc., was 9 per cent. of all the selling and delivering expense other than wages.

Where a customer whose purchases are to be delivered is waited upon by different salespeople in one store within a short time a system which insures that all these purchases shall be assembled into one delivery often makes great saving in the delivery costs.

(f) *Making Out and Rendering the Bill.*—This varies from the simple bill copied by hand into the retailer's ledger, which is barely suitable to the personally conducted credit business of the smallest, simplest type to the seemingly complicated time and money saving forms used by some of the larger markets and the better systemized department stores.

With cash stores the bill is often unnecessary.

While the bill adds some little to the cost of goods, even a brief discussion of its various forms leads into too much complication to be profitable.

(g) *Deliver the Goods.*—The money costs of deliveries vary with the distances between the delivery points; with the receiving facilities at the places delivered to; and, to a small extent, with the weight delivered.

The percentage costs of delivery, i. e., the relative cost of the delivery to the value of the goods delivered, varies, directly as does the money cost, but inversely as the value of the goods delivered.

The ideal delivery system consists of short routes starting from and finally closing back onto some depot, with many deliveries from each of the frequent and about uniformly spaced stops. The delivery means which is cheapest for a very short route may be a boy with a basket; in fact, if the wagon be considered as the moving depot which it really is, the boy with the basket is a necessary part of every small quantity delivery to houses.

It is not economical to frequently start and stop heavy trucks, nor is it economical to haul goods long distances in wagons of small capacity. For these reasons ideal delivery systems serving districts distant from the sales place have a depot centrally located in each such district to which the goods are hauled by trains, trolleys, or heavy trucks and from which light delivery wagons run over routes which close back onto the depot from which they started.

Isolated deliveries of small size are best made by engaging the services of some carrier, whether expressman or parcels post, which regularly covers such isolated point. Where, as in the case of perishable foodstuffs, delivery must be made promptly, delivery should be refused.

For business-getting reasons large retailers often agree to deliver goods anywhere within certain extensive limits. In some cases the actual cost of these deliveries exceeds the total sales price of the goods delivered. This is not only expensive to the retailer, but it is unjust to even that consumer whose goods are delivered at an average distance from the store and much more unjust to the consumer who purchases in quantity or who carries the purchases home. For the retailer has to charge enough to cover the expenses of doing business and to give him at least profit enough to live on. He, therefore, in making free deliveries, arbitrarily assumes the right to assess upon each of his customers the average of the expense of all deliveries.

The system of free deliveries is inherently bad, in that it not only furnishes no reward to those who, by foresight, try to reduce waste of human effort in such delivery, but that it actually stimulates even the wisest of the consumers to use carelessly what they must help pay for anyway.

The cost of delivering varies also with the facilities for the receiving of the goods.

Anything which takes the deliveryman's time or causes him extra effort to make

a delivery adds to the expense of delivery. Thus waiting for people to come to the door, deliveries through cellars to dumbwaiters, carrying goods upstairs, going to neighboring stores to get change, etc., while all possibly necessary under existing arrangements, all add to the delivery expense. The cheapest deliveries in actual cost per delivery are those such as milk and sometimes rolls and bread, which are delivered to accustomed or designated places at a time when most of those who might receive or be disturbed are asleep. This is possible for goods of large bulk compared with their value.

The costs of delivery will be decreased where it is possible to secure efficient help at low prices. Boys were at one time largely used for this service, but the better grade of boys are no longer permitted by their parents or guardians to engage in occupations which offer so little future.

Where men are used it has been found necessary by several of the large milk companies to pay about \$2.50 per day for about 9 to 10 hours' work to secure intelligent and efficient service.

On this basis, and keeping the costs of delivery down as low as they can with the aid of careful and well-informed administration, the cost of the actual delivery of milk, apart from costs of administration or other overhead costs, is about 2 cents per quart, or, since the average delivery is about 1.4 quarts, the average cost per delivery is about $2\frac{3}{4}$ cents.

These deliveries are made under especially favorable conditions of concentrated grouping, of time and of receiving facilities and would cost much more if made during the ordinary waking hours. It is to be expected, therefore, except where the ordinary retailer can secure much cheaper efficient help than can the milk companies, his deliveries will cost much more each as an average. Estimates by guess or opinion of 5 cents per nearby wagon delivery have been received from several grocers. What the cost of delivery to outlying districts has been may be judged by the parcels postage which some of the department stores now pay in preference to deliveries by express companies or by their own wagons.

(h) *Rectify Mistakes*.—Where the salesman personally wraps up the goods and personally delivers them at once to the customer, receiving in return the price thereof, the chance for mistake is almost eliminated. As a business increases in size, it becomes necessary to use the help procurable for those portions of the work to which they are by their abilities best fitted. The larger businesses thus become functionized and require carefully planned and often expensive systems to keep things running straight. Where mistakes occur retailers rectify cheerfully and without pretence of making any investigation, claiming that the cost of investigation often exceeds the value of the goods in question.

With a good system the expense due to mistakes is almost or quite negligible.

(i) *Collect the Moneys Due*.—This collection becomes an expense item adding materially to the costs of retailing goods only in the case of credit stores.

The expense is not so much for collecting as for the loss of accounts which are not paid. Where accounts are permitted to run only a week without payment, no one bill in general reaches such size that the consumer cannot possibly by judicious handling, be induced and enabled to catch up and pay up. But where extravagance is permitted to pay in promises until entirely unable to recover its credit, the honest customers are levied upon without their cognizance to wipe out the retailer's negligence. It is estimated by some retailers that, as between customers of the same loyalty, etc., all paying cash or all dealing on ordinary credit, that to those paying cash prices could be made 10 per cent. lower with the same profit to the retailer.

As has been already noted, some stores to combine the advantages of both cash and credit stores are endeavoring to have their customers always keep on deposit

with them sufficient moneys to cover either any ordinary bill of goods or else to cover a week's purchases.

(j) *Accounting*.—With the ordinary retailer the accounting is done by him personally and in spare times or after business hours. This item does not, therefore, often add much cost to the goods retailed.

(k) *Cleaning Up*.—This item generally adds a little to the expenses. While it may be said that the clerks, etc., have to do this after customers have ceased to purchase, nevertheless the clerks must, in their own comparison of hours and effort required of them as compared with those required of others or in other occupations, take this extra effort and time into account. And this, sooner or later, compels an increase in wages and therefore in selling expenses. Sand or sawdust, brooms, fees to garbagemen and ash men, etc., come in. No figures are available as to the total costs of this; but in one case garbage removals and sawdust alone amounted to about $1\frac{1}{2}$ per cent. of the total expense, apart from rent and wages.

(l) *Store, Pick Over, and Care for Perishable Goods*.—"Cold storage," "perishable," and even "semi-perishable" goods are deteriorating, or, at least, tending to deteriorate most of the time after they are ready to retail.

Retailers of cold storage goods are usually equipped with ice boxes which can reduce the temperature therein to within a few degrees of the freezing point. A few of them have mechanical refrigerating plants which can reduce the temperature to below the freezing point.

The reduction of temperature attainable by the use of ice is sufficient to delay for short periods, but not to prevent, the spoiling of meats, butter, etc. The mechanical refrigeration plants, if of sufficient size, can prevent this spoiling for quite long periods.

Either method is quite costly, the ice bill for a moderate sized butcher shop amounting to about 25 per cent. of the total year's expenses, other than rent and wages, and running up to \$40 a week in hot weather, which was 6 per cent. of the total price received from all sales in that week. Even at this, there were some losses by spoilage.

Grocers, apart from small ice boxes for butter, milk, etc., seldom have any proper facilities for cold or even cool storage of their perishable or semi-perishable goods. Losses on these when shut up tight over one or several nights in a poorly ventilated store or cellar often run high.

A very few grocers have enclosures under cover where fruits and vegetables can be stored with good ventilation and protected from direct sunlight and from speculation. Very few indeed have any means for keeping vegetables or fruits in cool or cold storage.

Because of these losses few grocers buy much more than a day's supply of perishable goods at a time and few buy even the semi-perishables in much quantity. They are thus compelled to either go to market or purchase from jobbers, generally daily, and to purchase at the then holding market price. The retailers, therefore, do not exercise as great a steadying effect on the market as they would if they had better storage facilities and they do add considerably to the cost of their goods by this necessary daily marketing.

A great deal of sorting and caring for goods, apart from that entailed in making a proper display, is made necessary by this spoilage in store. No figures as to the cost of this are available, but the costs undoubtedly run high, both for this and for the losses by spoilage.

Growers are, to a very considerable extent, leaving the retailing of fruits and vegetables to retailers who, in stores of their own, or stands rented from butchers, make a specialty of this. These retailers are mostly Italians, who seem to under-

stand the care and handling required for success in this line far better than the ordinary grocer.

Rent.—If a store prove successful in a certain location, the retailer is very unwilling to move. The buying public is influenced by small things, and ones which are frequently hard to foresee. Thus one side of a certain street is a good business side, the other side is not. This same street is a big retail business street within certain short limits not marked by car lines. Retailers on this street are very timid about moving; some have moved in times past and a few have failed in consequence.

If, then, a retail business prove successful the owners of the property help themselves by increasing rent as soon as the lease permits, and to as large an extent as prudence allows. The success of this one business to some extent established the business value of the immediate locality and the adjoining rents rise rapidly also. This rise in rent is, of course, accompanied by a raise in the owner's valuation of the property and at some time later, if success continues, by an increased assessed valuation, and therefore by higher taxes.

This is part of the price which the successful retailer must pay out and for which the consumer must recompense him. Nevertheless, if he can secure customers enough, the retailer can generally afford to sell the consumer at lower prices than can the retailer with small rent and few customers.

The majority of grocery retailers buy goods on from 30 to 60 days' time. They endeavor to keep in stock only such quantities of such goods as they can "turn over," or dispose of, within that time. Of stuff which sells slower they purchase correspondingly less, so that to a very considerable extent their credit is invested in their stock of goods and their capital in their fixtures, wagons, horses, etc., outstanding customers' accounts, cash for running expenses, and to some extent in vegetables and fruits when these are bought from farmers or other marketmen for spot cash.

The retailer knows perfectly well how much better he can buy in larger quantities and he is constantly being importuned by salesmen to stock up heavily of the goods offered, but he has to use judgment to resist the inducements offered. And, on the other hand, the retailer daily has people leave his store without purchasing, because he cannot induce them to buy that form of an article which he has in place of that which they desire or have been led by advertisements to believe that they may desire.

The buying public has little by little been educated away from the general store to different special stores, but the special stores each carry a far greater variety in their specialty than the general store did or could. The tendency is thus unfortunately, not toward that simplicity which makes for lower prices, but toward an often needless complexity, largely the result of competitive methods.

The retailer has not in general developed extensive business getting methods. Advertising might help him, but unless that is done skillfully, extensively and continuously the advertiser seldom gets back the money put into it. The retailers have not the necessary past experience to induce them to favorably consider the investment of their capital in such an intangible, evanescent and hazardous form. Nor in general are there any advertising mediums except calendars, mailed matter, billboards, window and wagons displays, that are sufficiently localized to give good returns on the publicity brought to retailers whose business is of a purely neighborhood type.

The following examples of expenses for butcher shops taken as averages of actual cases are shown as giving a good idea as to what becomes of the difference between the prices paid by the consumer at retail and those paid by the retailer at wholesale.

The expenses are for a year and the proprietor in each case took for himself as compensation for his days and nights of work the amount shown. The net profits left after deducting these expenses from the gross profits were for the smaller store sometimes as high as a gain of \$250 in a month, sometimes as low as a loss of \$300 in a month; the total net gain for a year was in some cases as high as \$600, in other cases a loss of \$200. The expenses ran fairly uniform, but the volume of business varied considerably.

Retailers also report difficulty in advancing retail prices to correspond with wholesale advances without loss of customers or a curtailment of their buying.

EXPENSES OF A BUTCHER SHOP OF THE SIZE INDICATED AND HIRING THE HELP, ETC.
SHOWN.—TOTAL FOR ONE YEAR.

	Small store.		Larger store.
Rent of store (alone).....	\$600		\$1,055
Repairs to fixtures.....	60		90
Insurance on fixtures, \$2,000 at 6%.....	12	\$4,000 at 6%.....	24
Telegrams and postage.....	50		75
Bill heads, order blanks, etc.....	50		65
Advertising—only in programs, church papers, etc.....	25		150
Help employed:			
1 Proprietor at.....\$25.00	2,678	1 Proprietor at....\$35.00	5,226
1 Butcher at.....16.00		2 Butchers at 32.00	
1 Deliveryman at.....7.50		2 Deliverymen at..17.50	
1 Boy at.....3.00		1 Cashier at.....6.00	
Extra help Saturdays—none.....		1 Boy.....4.00	
		1 Butcher.....5.00	
		1 Boy.....1.00	
Ice.....	280		400
Salt.....	30		40
Sawdust.....	26		50
Light, gas.....	60	Gas.....	29
		Electric.....	120
Garbage removal.....	13		32
Saw filing and sharpening.....	38		55
Paper, cord, and skewers.....	78		156
Expressage.....	100		120
Carfare and incidentals.....	250		390
Stable expenses—rent, feed, bedding, care of horse, harness and wagon—1 horse and 1 wagon.....	324	2 horses and 2 wagons...	648
Shoeing.....	78		100
Depreciation on horse and wagon.....	50		72
Repairs to wagons and harness.....	36		
Total expenses.....	\$4,766		\$9,048
Net profits above expenses.....	375		2,000
Total amount of yearly sales.....	16,000		40,000

In the case of the smaller store expenses and profits figure 32 per cent. of the total sales; expenses alone, 29.8 per cent.

In the case of the larger store expenses and profits figure 27.6 per cent. of the total sales; expenses alone, 22.6 per cent.

The average of all purchases in several butcher shops in a fairly well-to-do neighborhood is about 54 cents per purchase, and it is less in poorer neighborhoods. A reduction of 10 per cent. of the sales price of this purchase is, therefore, little more than one carfare. It will accordingly be seen that if consumers are to purchase for immediate needs only they must purchase in local stores.

A much larger meat market claims that its total expenses are less than 10 per cent. of the gross selling price.

Groceries.—The gross profits on different articles figured as a percentage of the wholesale price vary greatly from little or nothing on sugar to about 100 per cent. on tea. They average for the grocery business between 20 and 25 per cent.—in few cases more.

A retailer doing a large business has the following advantages over one doing a small business:

He buys in larger quantities, and therefore generally gets a better price than the small buyer. In addition to this, he can often, because of this large buying ability, avail himself of special opportunities to buy at low prices from those producers who are pressed for cash, etc.

His total expenses for buying are often but little more than those of a much smaller retailer, and this expense is distributed over much larger quantities purchased.

His store, while perhaps costing more per square foot of floor per year for rent, is used so much more actively that the rent charges per dollar of business done are much less.

His clerks and help are kept more uniformly busy throughout the day and therefore cost less per dollar of business done.

His deliveries can often be better arranged and therefore are less costly per delivery.

He is apt to get a larger percentage of the large sized consumer's orders than does the small retailer.

He is able to equip with facilities which greatly reduce spoilage losses, delivery and other retailing expenses.

His management, accounting and similar overhead expenses, while perhaps totaling more than those of the smaller retailer, are spread over so much more business as to constitute a considerable reduction in the percentage of expense.

A large retail grocer advises that 1,000 persons (about 200 families) to supply would make a very nice business for most grocers, but that his business runs larger than this.

According to the Report of the Committee on Markets of New York State Food Investigating Commission, there are 11,000* retail grocers within Greater New York, and the approximate retail value of all the goods sold by grocery stores and consumed in Greater New York in one year is \$644,683,000. Also, by estimate (*World Almanac*), there were in Greater New York, January 1, 1912, 5,077,000 persons. The average retail store, therefore, supplied 461 persons, and the average yearly sales per store were \$58,600.

This is the average, and inasmuch as there is a large number of stores whose total yearly sales exceed \$100,000 each, it follows that the total yearly sales of many of the retail stores are pitifully small. Even with expenses cut down to the point where not ordinary wages but bare living costs are extracted from the business by the retailer, the rent and other unvariable expense items make necessary a high percentage of increase of consumer's price over wholesale price for these small retailers.

These small retailers cannot lower prices without taking the reduction out of their own pockets. They are caught in a situation from which the only escape is to secure a greater volume of business, and against them in this are the real estate interests, always seeking to rent more stores and to increase rent expenses to them.

The consuming public prolongs through misguided sympathy the struggles of these smallest retailers, delaying that readjustment of occupation for the unnecessary

* One of the directory companies gives the number of retail grocers within Greater New York as 14,000.

retailer which would really benefit his condition and would benefit the public itself by making lower food prices possible.

As it is the larger retail stores can lower prices at any time and the smaller ones cannot. The larger ones have it in their power, therefore, to eliminate a considerable number of the smaller stores at any time. They are doing this to some extent, but they are glad to have as competitors who furnish criteria as to prices a class whose greatest sacrifice still leaves them a satisfactory profit.

The larger retailers are in general the wiser and more able ones. They can be depended upon not to enter upon exterminative cut rate wars among themselves. And, on the other hand, unless they can make combinations with the wholesalers discriminating against the small retailers, if the large retailers raise prices to increase their own profits directly, the smaller retailers can, by not advancing prices much, or at all, secure a larger volume of business, and therefore a better profit.

THE INTEGRITY OF THE WHOLESALE MARKET IS, THEREFORE, OF PRIME IMPORTANCE TO THE CONSUMING PUBLIC

But it is possible for the retailers, by a campaign of education carried on among themselves, to raise the judgments of practically all of the retailers as to what profits and what prices they should get. This need not take such definite form as to be a combination in restraint of trade. It may simply mean a new set of commercial ideals for the retailers, a set of new personal convictions that certain profits are their rightful due. These ideals vary from one locality to another, but against them there is no appeal for the consumer.

The consumer's only chance to buy at anything like the wholesale market price lies in a sort of semi-wholesale market, where the minimum of services is sold along with the foodstuffs. Such a market is of value not only to those who actually buy therein, but also to a considerable degree to all of the public, as furnishing examples of prices to consumers which can actually be secured.

There have long been retail markets, the buildings of which were owned by the city and the stalls rented out to retailers. The prices are somewhat lower than those of other retailers in the same section and considerably lower than those of retailers in the more expensive sections of the city. These sell about as little service as possible along with the foodstuffs; but their locations are in general so remote from the consuming districts that the expense of time, carfare and trouble greatly reduces their value to the community.

A very successful market in Philadelphia, that at Reading Terminal, owes a considerable portion of its success to the package system of that railroad. This railroad has always paid much attention to its commuting business, and, in addition, it does a large short-haul passenger business within the city limits.

Packages are taken from the terminal to any one of the railroad stations within the commuting zone for very low fees. This the railroad can afford to do, since it does not go outside of its own property to either collect or deliver.

Foodstuffs bought at the Reading Terminal Market can be delivered by the market men to the railroad's package service for almost no cost, because the market is in the railroad terminal, and because all the goods for this package delivery anywhere along the Reading's lines are received at the same place. The goods are marked with the owner's name and railroad station, the cost of the service is paid for by stamps stuck onto the package and which are sold, generally in quantity, by the railroad company, the goods are dumped into a receiving bin at the terminal. No receipts are given. So far as known, the owner simply takes a chance, the same as he does in the unregistered United States mail. The goods are put off the train at the owner's station and are taken from there by the owner or his agent. In

this way the otherwise very high costs of foodstuffs in the suburban places are very materially reduced.

Reading Terminal Market is very fortunately located in being very close to the heart of the business, and also of the shopping, districts.

In this city there is a good chance to do likewise and thus to stimulate in an at present much needed way that uncongested suburban living which, viewed broadly, is of so much importance to the healthy life and progress of this city.

Throughout the city several of the largest retailers have established chains of stores, having one purchasing and one warehouse and several branch retail stores. Most of these are cash stores, the local manager of which is, in some cases, required to purchase a cash interest in his store.

This scheme gives the retailer the chance to buy to much better advantage than the smaller retailer has, but does not effect the saving of expenses which can be made where a sufficiency of consumers can be attracted to do the same amount of business in a single store.

Many consumers do not feel satisfied to pay the increase in prices usually charged over the wholesale rate.

They seem to feel that to buy goods and then sell them again is very little labor and should have very little recompense. And this is somewhat true where the consumers are in advance agreed as to what they want and have also agreed to take a sufficient quantity to be enabled to buy at wholesale.

Accordingly, a number of the consumers have in several places in this country united to establish coöperative stores. The most of these are not coöperative; they are simply stock companies, the stock of which is owned by the consumers; and the profits of which go to the consumers in proportion to their stock and to the amount of their purchases. The people in most of them do not coöperate either to advertise the store, to bring in more customers, to reduce the number of varieties of foodstuffs required to be carried, or to reduce delivery costs. Most of them hire a storekeeper and the necessary assistants, and have a committee who supervise the work of these people.

The capital stock is sold often in limited quantities to any one person and may sometimes be bought on time, even in some cases out of the purchaser's dividends. As generally run, each purchaser receives a credit slip for the amount of the purchases made. At stated intervals either the whole or some fixed proportion of the profits are divided among the purchasers and the stockholders, in proportion to the credit slips held by them.

The idea has proved highly successful as applied in those countries where it is understood and trusted. To be a success it requires, however, actual coöperation on the part of the consumers to get for the store all the business they can, and to make profits by agreeing upon a few varieties of the different food products, and to reduce expenses by ordering in quantity and sufficiently in advance to permit of economical assembling and delivering arrangements.

The two following samples of replies received from coöperative stores in response to requests for data are typical:

For reference these are called (M) and (N) respectively:

What is the exact name of your association?

Where is your headquarters or main office?

How many stores have you? (M) One. (N) One.

Where are they located?

What is the size of the main store floor of each? (M) 23' x 40'. (N) 1,000 square feet.

How much business was done in the year 1912 in each? (M) \$50,000. (N) \$15,000.

How many clerks were employed in each? (M) Four. (N) Two.

How many wagons delivering goods have you? (M) One. (N) One.

Roughly, what per cent. of goods sold to your stores are carried away by the purchasers themselves? (M) 10 per cent. (N) 20 per cent.

Do you make a delivery charge? (M) No. (N) No.

If so, how much?

Roughly, how many deliveries does each wagon average per day? (N) Thirty-five.

What is the average cost of a delivery? (M) Fifteen cents.

What is the average value of goods of each delivery? (M) \$3.00.

Or, if you do not have costs so divided, can you state the total delivery expense in comparison with the total value of the goods delivered? (M) 7 per cent. (N) No.

Do your wagons go around to collect orders? (M) Yes. (N) Yes.

If so, what part of their time is so employed? (M) One-third time. (N) One-third time.

What are your total running expenses per year? (N) \$1,600.

Can you itemize this into clerk hire? (N) \$1,180.

Delivery expense? (N) Horse and team, \$112.

Rent? (M) \$1,600. (N) \$216.

Lighting? (M) \$80. (N) \$24.

Advertising? (M) \$50. (N) None.

Telephones, etc.? (M) \$11.

Pay station (rent partly paid by outsiders)? (M) \$150.

Roughly, what per cent of your customers are:

(a) From among the rich? (M) Very little. (N) None.

(b) From those in easy circumstances? (M) 60 per cent. (N) None.

(c) From the middle class? (M) 30 per cent. (N) 10 per cent.

(d) From the poor? (M) 5 per cent. (N) 7 per cent.

(e) From the very poor? (N) 20 per cent.

Roughly, what per cent. of your customers of each class buy for spot cash? (M) All. (N) All run weekly credit.

Do you handle

Green groceries? (M) Yes. (N) Yes.

Dry groceries? (M) Yes. (N) Yes.

Fresh meats? (M) Yes. (N) Yes.

Milk? (M) Yes. (N) Yes.

Coal on orders? (M) Yes. (N) Yes.

Wood on orders? (M) Yes. (N) Yes. Coal not counted in as a business.

We have a special contract with a dealer.

Wines, etc.? (M) No. (N) No.

How long credit do you give? (M) Very little, sometimes from pay day to pay day. (N) One week.

How many shares of what par value constitute your capital stock? (M) 10,000 shares. (N) 1,000 shares (authorized), 200 sold, of par value.

How many stockholders have you? (M) 1,328. (N) 98.

What is the greatest number of shares you permit any one person to hold? (M) One. (N) Twenty.

How much of this total capital is held for running or cash capital? (M) None.

How is the coöperative feature applied? (M) Dividend each year, based on amount each stockholder purchases. (N) Account is taken of stock, etc., quarterly and all the profits over expenses divided among purchasers.

What is the approximate percentage of savings effected on the gross sales if such gross sales were figured at the ordinary prices charged by stores in your neighborhood? (M) 7 per cent.

If there is a general distribution of a certain part of the effected savings at certain times of the year, what has been the part so distributed? (M) Not running a year yet. (N) 5 per cent.

At what times in the year has this occurred? (N) Quarterly.

In what proportion is this distribution made to stockholders? (N) 5 per cent.

To non-stockholders? (N) $2\frac{1}{2}$ per cent.

Do the stockholders receive a dividend on their stock apart from the above-mentioned distribution of savings? (M) No. (N) Yes.

If so, what per cent. has this been? (N) 6 per cent.

Has this or similar coöperative purchasing scheme in your vicinity experienced such rapid growth as to lead you to expect that this will supplant the present retail stores soon? (M) Great increase in coöperative stores during past year. (N) No.

If so, how soon? (N) Many years.

What seem to be the principal objections to this coöperative buying and from what class of people does this come principally? (N) Hard to get people in this locality to understand that it is not a money-making scheme.

Do you buy from

(a) Jobbers? (M) Yes. (N) Yes.

(b) Commission dealers? (M) Yes. (N) Yes.
or from

(c) Producers? (M) Some. (N) Yes.

And in what proportion from each? (a) (N) 15 per cent. (b) (N) 50 per cent. (c) (N) 35 per cent.

Do you bring the goods from market on your own wagons? (M) Yes. (N) Yes.

Or is it delivered by public truckmen? (M) Some. (N) No.

Or by the trucks of the commission men? (M) Some. (N) Some.

What percentage does this cartage from market to your store add to the cost of the goods? (M) Slight. (N) None directly.

How long a time does your buyer generally have to spend in market to purchase all the day's supplies? (M) About two hours per day. (N) Six hours weekly.

The percentage of the total sales price which the consumer can save on his total foodstuff purchases is probably not over 10 to 12 per cent., unless the consumers combine to act coöperatively on a large scale.

It is proper to say that coöperative stores in Great Britain and in Italy have attained immense proportions and are very great successes. As will be seen from the preceding study of the retailer, the larger the business becomes the more economically it can be run. It would seem, therefore, that those interested in the success of coöperative purchasing should, instead of establishing many small stores, unite just as far as possible to make one large store, with which they would actually coöperate in so far as a consumer can. The large foreign coöperative stores make the largest part of their savings, not out of the retailing end, but out of the wholesaling, the manufacturing and even the producing ends. Nevertheless, they started as retailers.

The cost of goods and of service should be separated so that those who need goods, but can perform the services for themselves, be given an opportunity so to do. And doing this would appear to be an advantage to the local retailer at least, if not to the larger stores which use this free delivery anywhere as part of the attraction to draw customers near.

The hard pushed among the consumers have just about so much to spend for foodstuffs. If a considerable part of this food supply price is eaten up in charges for service which the consumer could, or even does, perform himself, it must be evident that he cannot pay as large profit on the foodstuffs bought as if he were free to benefit by performing his own delivery and other services.

Packages.—The functions of a package are:

- (a) To furnish a convenient means for handling the goods.
- (b) To furnish protection from physical damage to the contents.
- (c) To furnish security from pilfering.
- (d) To prevent loss of finely divided or ground products.
- (e) To furnish a measure of the contents.
- (f) To furnish ventilation to the goods.
- (g) To furnish a means whereby the goods carry marks of identification, shipping directions, notices of quality, compliance with laws, advertising, etc.
- (h) To insure cleanliness of the contents.

Packages are of two general types, non-returnable or "gift" packages, the whole cost of which is added into the producer's price, and returnable packages, for which the producer adds to his price sufficient to cover depreciation and the charges for returning.

Packages or containers which, due to contact with the foodstuffs or from other causes become so stained or dirtied as to be offensive in appearance, dangerous to the safe transportation of the goods, or mutilated in opening, are generally made gift packages.

The charges for returning consist of two parts, the costs of collecting and shipping and the return freight costs.

While empty packages on the way back to the producer are generally carried by the transportation companies for much lower rates than would be charged for the same empty packages, marketward bound, their large dimensions, compared with their weight, make their transportation expensive.

This has been found possible to be overcome in the case of some foodstuffs by collapsible packages. So far these have only been successfully made for those articles which do not need protection from physical damage, such as sacks or bags for potatoes, beans, etc., collapsible onion crates. Also by baskets, like peach baskets, which will "nest."

Where the return haul is very long gift packages are commonly used, anyway. Thus flour and sugar barrels, although expensive, are reckoned in as part of the selling price of these goods in barrel lots.

Although the cost of gift packages becomes part of the producers' selling price, the full cost of these packages is not always added to the costs of the foodstuffs to the consumer. For these packages, if retained by those who do not wantonly destroy them, often have a value nearly or quite equal to their original cost, made, as they sometimes are, in vast quantities and where materials are cheap. The gift packages of distant producers often become later the returnable packages of the nearer-by producer, and the packages of certain foodstuffs, like flour and sugar barrels, furnish a very considerable part of the containers used for the shipments of miscellaneous manufactured barreled goods from the city and for various other purposes in the city.

In most cases the package is not wasted after being emptied, but is used and reused until of no further value as a container, and then a considerable part of the value of the material in it is recovered, either as fuel or, as in the case of tin cans, glass bottles, etc., as materials from which to make new containers or other articles. The labor concerned in the making of the package is, of course, lost in the last reclamation.

Special packages of a form not likely to be used again should, therefore, be constructed with as little labor cost as is possible to produce a satisfactory package for this one use. Packages, on the other hand, of a generally desirable shape and

capacity and which will not by this first use be rendered unfit for future service should be well made and of good materials, for the value of the later service of this package may nearly or quite offset its first cost.

Certain foodstuffs, such as table oils, canned fish, olives, etc., are often packed in very small containers, to suit a small and infrequent demand. Were these articles in more constant use, the consumer would doubtless buy in larger packages and thereby save money.

Containers made of costly materials and workmanship, such as are sometimes used for advertising purposes, add materially to the cost of the foodstuffs.

In general, then, containers made small enough to meet the demands of constant users need not, and, when the savings due to spoilage losses are considered, do not, add to the cost paid by the consumer for foodstuffs.

But where considerable doubt exists in a producer's mind as to whether there is sufficient margin in a particular crop, then ready for market, to make it profitable to market it, the expense for the containers may, and often does, cause a decision to let the crop rot or to feed it to the live stock rather than to market it. This helps to keep city prices high, even with a glut in the nearby country. The blame here belongs properly, not to the use of containers, but to that lack of market organization which by its uncertainties prevents low-priced supplies from being sent to market. Shipment in bulk helps where the goods can be sold in bulk as shipped; where they have to be packed at market bulk shipment does not offer so much relief.

(a) Foodstuffs which can be handled by mechanical means without receiving serious injury can, when shipped in sufficient quantities and to places equipped with mechanical means, be handled more cheaply in bulk. In all other places it is cheaper to handle goods put up in packages of a size which is a proper load for one man or for two men than in either smaller packages or in bulk.

When the number of handlings which goods must receive in even the most direct usual marketing—a first from producer's packing floor, storehouse or ground to his truck, a second from truck to car or boat, a third from car or boat to commission man's truck, a fourth from truck to sales floor, etc.—is considered it will be seen that small differences in handling costs may easily become large final costs.

Foodstuffs in piles take damage first from pressure, due to the weight of the stuffs above them, which tends to burst or crush them; second from the lack of ventilation, which promotes heating, fermentation and decay. When, in addition to the above, the chafing and bruising due to motions in transit and the tumbling over, damaging with shovels, etc., in handling from piles is considered, it will be seen that for the maintenance of good quality none of the perishable and perhaps only a few of the semi-perishable foodstuffs should be shipped in bulk.

Perishable foodstuffs of light weight, like berries, etc., are commonly packed in shallow containers which are open on the top and which containers are packed top side up in a carrier or crate which is always transported top side up. The containers are so supported that no weight other than their own can come onto the goods in any container. Goods so packed are free to move slightly, but little damage results from this motion without weight. Perishable stuffs individually heavier, like peaches, are sometimes shipped in the same way, except that they are chocked and covered with paper to prevent that motion which with their weight would cause damage, and also to prevent the spread of rot and other fungous growths from a bruised fruit to an adjacent one. Less tender foodstuffs are packed in larger containers up to the full-sized barrel. Most of the containers used have been evolved, little by little, as conditions demanded, so that the goods might arrive in market in good condition.

Foodstuffs in barrels may be shipped either open at one end or headed up at both. If open at one end and the stuffs kept below the ends of the staves, the

lowest layer of the contents of the barrel has only the weight of this barrel's contents onto it, but the contents are freer to joggle than when headed up at both ends. If the stuff is of a heavy nature, the weight and the freedom to move may cause damage. Even if packed with considerable pressure, as apples generally are when headed up at both ends, such careless handling as dropping the barrel from the end of a truck, rolling on their bilges over rough places, etc., will bruise and damage.

Goods of a perishable nature can, of course, be put on board cars in bulk for less cost than in barrels, and in barrels for less than in smaller containers, but this saving does not mean a saving to the consumer, for, apart from later handling costs, the spoilage and loss of quality in transit are such that for like qualities the consumer would have to pay more.

Semi-perishable foodstuffs, depending upon the toughness of their skins, etc., take more or less damage in handling in transit. Some, like potatoes, which do not bruise easily, and whose bruises do not disease rapidly, are still shipped in bulk and then sacked or barreled at market.

Goods in bulk have in the past commonly been barreled or sacked by the commission men, who have also regraded them. When brought from the producer in bulk as being of a certain standard grade the tendency has been to pick out of the lot upon arrival at market all those of the specified grade and all those better than the specified grade whose presence would tend to bring all up to the grade, and to reject, to the producer's loss, all below grade.

Goods in bulk are often sold by the shipper as being of a certain grade and are then shipped, subject to inspection and acceptance.

If when the goods are received the market price is higher than when bought, the goods are liable to be received even if not quite up to grade; but if the market price has fallen, any imperfection or technicality, sometimes even of the slightest, is very often seized upon to evade acceptance or to compel the shipper to reduce his price. This the shipper who is miles away from these goods, and generally does not know who to turn to for help, under the conditions is apt to be forced to do.

Whereas if these goods were graded reliably and so packed in containers that their condition upon arrival was practically assured, such sharp practice would not be possible.

Many of the larger packages still in use by the less progressive producers are relics of that past wherein large losses by spoilage were expected, even for short hauls and short seasons.

The present requirements for goods to arrive in perfect condition after being shipped thousands of miles, and of having their seasons greatly lengthened by careful storage and handling, have necessitated one change after another in the size and shape of the package and in the method of packing.

The packages used by the commission men were commonly too large for the consumer to buy, this necessitating a rehandling and repacking by the retailer. The costs of both these repackings ran high. Also there is always a considerable uncertainty as to the condition of the goods in the bottom of large tight-sided packages, even where honestly packed. The inability to see the condition of all of the goods makes their purchase somewhat of a gamble, the expense of which is not borne by the middlemen.

The goods suffer severely in condition in these rehandlings and repackings and lose their identity, which, where trial previous to purchase is not allowed, is often the consumer's main guarantee of quality.

Actuated by these considerations, the producers through their associations are adopting one after another packages of such small size that the consumer buys in

the original package which bears the mark and guarantee of the producer's association.

These packages are commonly of such shape as to display the goods as completely as possible, thus eliminating the necessity of handling the goods to ascertain quality and condition. These small packages may or may not be crated into larger ones for more economical handling.

Not only the perishable foodstuffs but semi-perishables, such as apples and potatoes, are now being sold this way, with the result that the producer gets a larger share of the consumer's expenditure for foodstuffs, that there is much less waste, and that the retailer and commission men, while receiving a smaller share of the consumer's expenditure, perhaps make at least as much money. They can sell much more stuff with the same effort in the same time.

As to quantity, shape and size, packages are still most various. Attempts have been made by both federal and state laws to control the size of containers, but no uniformity of package has yet resulted.

In some markets, such as Boston, most goods, etc., are handled in bushel boxes. Each market has a tendency in the case of each foodstuff to demand that size and shape of package to which its retailers are accustomed. But this requirement, it has been proven, is readily changed when a really desirable package appears.

Packages should contain a definite and easily ascertainable quantity.

Since the round-cornered, sloping-sided shapes commonly used do not permit comparisons to be superficially made with reasonable accuracy, the quantity contained should be plainly printed on the package. This is being done by many of the associations now as a matter of good business sense. Quantity is measured by either count, volume or weight.

For small quantities of articles of a large individual size direct count by either the piece, dozen, score, gross or hundred is quite satisfactory, but only when proper standards of size and other qualities are observed. For larger quantities individual pieces are by count bundled or crated and the bundles or crates sold by count.

Quantity is measured by volume either directly, as when a measure is filled and emptied, or incidentally as when goods are packed in containers of known sizes. The first method is only used for small quantity; the latter is used nominally very generally, actually not so much. Thus grain and potatoes in bulk or carloads, while nominally sold by the bushel, are often actually measured for convenience by weight. This is easily done with a track scale, the weight of the car itself being known.

The legal weight of a bushel of each of the ordinary grains and vegetables and of some fruits has been established for the State of New York by Chapter 20 of the Consolidated Laws of the State of New York.

Other states have established other legal weights which in some cases are different from those of New York State.

Unless the size of the individual piece is small, as compared with the size of the measure used, a quantity measurement by volume is liable to be quite inaccurate. In such cases, to protect the consumer, the law requires that goods be retailed by the heaped measure. This accounts in some part for the increase in cost which is put upon some foodstuffs by the retailer who buys by the struck bushel of 32 quarts, out of which he can generally honestly get only 24 "heaped" quarts in selling, an apparent increase right here in prices of 25 per cent. figured on the selling price, or of 33 1-3 per cent. figured on the cost to retailer. In many localities, to overcome this, foodstuffs are retailed by weight.

It is important that any goods exposed for sale to purchasers who are not well posted as to the grades of such goods should be plainly marked once for all by some reliable and responsible party. The package gives a convenient and somewhat lasting means for the proper display of a marking of this character.

Loss in transit in bulk shipment, while not properly a part of the subject of packages, is one of the reasons for the adoption of packages. Custom, in some cases supported by legal decisions, has settled upon certain percentages of the total amount shipped which shall be allowed by the shipper as loss in transit.

The Wholesale Market.—Generally speaking, all who “buy to sell again” are considered entitled to buy at wholesale. There is, therefore, among these buyers more diversity in the size of the single purchase than there is among the consumers.

As has been pointed out under the “Producer,” producing conditions require that a crop be grown in large quantities of a sort, and shipping conditions often require a still further aggregation. Few retailers buy in as large quantities as the producer has ready to market at a time, and still fewer retailers buy in as large quantities as those in which the shipments really come to market.

Some retailers when buying in market prefer to go from stand to stand, buying the whole or part of their day's supply of one article in one place, and of another in another; others prefer to buy a large portion of their day's supply in the one place. It comes about thus that the wholesalers who sell the retailers seldom handle one article exclusively, and that each has, therefore, a tendency to handle unaided only the smaller shipments. To distribute the larger shipments among the various wholesalers and jobbers the services of a group of men sometimes known as receivers or as brokers are found desirable. These men sell large quantities, in general do no handling or resorting, and can therefore perform their service without adding much to the cost of the goods.

Since they do not in general deal with the retailers at all, they escape that jealousy and distrust which a wholesaler is apt to encounter when trying to sell to a competitor a part of a large shipment; and, by enjoying to some extent the confidence of the wholesalers, the receiver or broker is enabled to gauge their needs and therefore to sell more readily. Certain foodstuffs which have to be prepared before the consumer will buy are sold by these brokers to the large manufacturers. Thus, grain, coffee, sugar, etc., are distributed.

This distributing is performed under quite different surroundings for different articles.

Well standardized foodstuffs are traded in at Exchanges. The goods have been graded and possibly sampled by skilled inspectors, generally officially connected with the Exchange, and are sold on the floor of the Exchange by the gradings thus given and sometimes by sample. The goods themselves are meantime, either in transit at termini or, in some cases, in storage.

Goods for which standard gradings have not been so well established are sold by grade, subject to inspection at delivery.

The cost of this service is generally somewhere about 2 per cent. of the sales price, charged as in the case of potatoes at a fixed price per bushel (at present about 1 cent per bushel), and in case of canned goods at 2 per cent. of the sales price.

Sales are made in this way generally to jobbers or wholesalers, who buy the goods outright and then sell them again to the retailers, making for themselves what profits the prevailing market prices at the time of these sales permit.

These jobbers or wholesalers do perform a certain amount of useful service, for which they must be paid, but the amount of pay taken when opportunity offers as compared with the service rendered and the method of taking the pay cause them often to be classed as speculators.

In some cases these jobbers or wholesalers, by going into distant fields, secure supplies for an otherwise partially unsupplied market, but this function could be performed just as well by the energetic action of reliable and efficient commission men.

The necessity for this distribution to the wholesalers who sell the retailers is

greatest in the case of most "perishable" goods sent in large shipments. The unit for most shipments is the carload, and this quantity of most foodstuffs is easily within the capacity of most commission men. If, therefore, commission men were all properly trustworthy, instead of one large shipment several shipments of, say a carload each, could be made to different commission men in the same market.

It has been urged against this that a wise man will not place part of his goods in competition with another part; but unless some one jobber is found who will purchase and sell the whole shipment to the retailers, the goods are really placed in competition by the various jobbers or wholesalers who have bought them, anyway. Besides this, a large proportion of the retailers as yet pay little attention to brands, even where brands are used, but buy by their own judgment as to quality. This tends to reduce the directness of the comparison of prices, and therefore by that much to withdraw the goods from competition with themselves even though offered by different sellers to the same buyers.

All sales, of course, consist of three essential parts, an offer, an acceptance, and an exchange of the goods and their agreed upon equivalent.

If the offer and acceptance, constituting the agreement of sale, are made privately, the sale is a private sale; if made publicly, it is a public sale. In all public sales the goods go to the highest bidder; but there are two ways of bidding—one, openly by voice or motion, so that all present can know at once how much was bid and by whom and can raise the price to the limit which they are willing to give; the other by written tender, made simultaneously by all bidders and opened and awarded, generally publicly. In this latter type of public sale the bidders have no guidance as to what to bid from the bids made by their competitors.

There are advantages and disadvantages to both of these ways of bidding; both are in use and both have their adherents.

Collusion and conspiracy are possible under both forms, the main safeguard against this being in a large number of bidders.

If in a market but one public sale is in progress at a time, all bidders must await the putting on sale of the articles they desire and their own successful bidding to secure the goods they desire; and if several public sales are in progress simultaneously or nearly so, the bidders must attend such as they can of those offering the goods they desire, being hampered in their movements by the necessity of waiting until their highest bid in each sale has received consideration.

These many men who have to wait for the completion of each public sale could, in the same time, have completed a considerable number of private sales.

The auction sales of fruits are conducted with perhaps as much dispatch as any public sales. The goods are on view by sample in a place nearby to where the auction is held; printed slips, freely distributed to all attending the sale, give the date, time, and place of the auction, and on whose account the goods are sold, the marks shown on the samples, the quantities in each lot to be sold at one time, and the number of that lot.

The auctioneers call aloud, gradually increasing prices, agreement to buy at the price named being given by a raise of the purchaser's hand or other understood signal visible to the auctioneer or his assistants.

The average time required for the auction of any one lot is one-half minute.

While many of the lots offered are small enough to be easily within the usual purchasing capacity of retailers, these sales are attended by very few retailers indeed, the usual purchasers being jobbers or dealers, and sometimes a few hotel men.

It is seldom that a retailer has less than a dozen different articles to buy at a market, and often he has many more.

If, of the city's 11,000 retail grocers and the very many additional fruit and vegetable dealers and peddlers there come to one of the city's markets in one day,

750 separate buyers, each with 12 articles to buy, it will be seen that if all the goods were sold at a single auction sale it would take 75 hours to complete this sale; if a dozen separate sales were running at once, $6\frac{1}{4}$ hours would be required to complete each.

The average retail grocer goes to market each day in the season when fruits and vegetables are most plentiful, every other day or still less often when fruits, etc., are not so plentiful. He starts early and aims to leave market in time to get the purchases to his store by or before eight o'clock in the morning. He spends in market from one to two hours, and in driving to and from market as long as he must. This means that if his store is far from the market he must leave market earlier than if his store were nearby.

The market price of goods of the same sort and quality varies not only from day to day, but from hour to hour.

The daily variation and some part of the hourly variation depend upon the demand and the supply. This is judged by marketmen, by the way the market cleans up. If the demand for any article is strong and the supply put on sale is exhausted, the price thereof in the next market has a tendency to rise, and will rise unless more than the average supply is brought into market.

If the market on these goods opens "strong," that is, if high prices thereon are being asked and paid when the market opens and only a small extra supply is brought into the market, the market price thereof will rise. But often a small additional rise of price will put on the market a large supply of goods which have been held in storage under orders to be sold when the price reaches a set figure.

The market is thus during its active time governed in a certain way by demand and supply. But after the main bulk of the trading has been completed there is always a considerable quantity of goods on hand which are sacrificed. These are either all-right goods held by people who are anxious to be rid of them, such as farmers who do not care to cart back to the farms their unsold goods, or goods of which so little are left as not to be attractive to the ordinary retailer, or else goods which by the next market may be in unsalable condition. Selling of this sort starts late, generally not before 10 o'clock A. M.

These are bought largely by certain peddlers, pushcart men, and sometimes by consumers.

A few of the large cash stores (retail markets) that have good storage facilities also make a practice of buying in this way, sending their motor trucks and buyers around to the various markets.

The difference in price many times is quite marked, goods being sold in many cases for a small fraction of their market price.

It follows, therefore, that the retailer who, because of his long distance from market must leave market early to get his goods on sale in his own store in time, suffers because of this distance, losses not only due to higher transportation costs and to deterioration of goods in this transportation, but also due to having less time in market in which to benefit by market price changes.

The retailer who is buying most perishable goods cannot improve this buying condition by coming to market later, unless he provides at his store such cool or cold storage facilities as will enable him to keep over from the previous day sufficient goods for his morning trade.

Retailers vary considerably in their buying habits in market. Some of the retail grocers seem to deal nearly or quite exclusively with a single, or at most a few commission men, or dealers from whom they may buy on credit. Others go out and bargain with farmers, commission men, and dealers or speculators, generally for cash. The fruit and vegetable men and peddlers are generally much sharper and more energetic buyers than the retail grocers.

The farmers hold their prices up to nearly or quite what the commission men or dealers ask, but in general offer no credit accommodations. They will often sell a speculator sufficiently below the market price to enable him to sell their goods in the same market in competition with themselves. This seeming foolishness is committed most often when the farmer has a large amount of one article which, due to uncertainties of the market, he fears may be left on his truck unsold at the close of the market.

The retailer exhibits in his buying many of the characteristics of the buying consumer. He has, of course, a much better knowledge of the goods, but has ahead of him a much more complex problem.

In market, he journeys back and forth and around, pricing such goods as he desires and his eye sees, and sometimes being conducted to the interior of one of the stores or booths to see goods which the marketman believes would interest him. Almost all of the selling is done on the street level and immediately adjacent to the public ways in the market. The second floors of the market buildings have so far been of use only for storage purposes.

Most of the retailers have immediate need of their purchases, and to get these without delay and without danger of substitution they come to market in their own wagons. Many of them will come this way, in all probability, unless extreme difficulties are placed in the way of so doing, at least until retail stores become equipped with cool or cold storage adapted to carrying over sufficient of the "most perishable" goods to keep the store supplied until the delivery wagon from the market can reach them.

In some markets the retailer drives back and forth in his own wagon and buys from the wagon. In others he leaves his wagon in front of the stand of some dealer or commission man, generally the man from whom he buys most, and goes around on foot. His purchases are then brought to this place by the market carriers, men who, with large push carts, collect the goods bought and take them for a fee to the retailer's wagon in the market.

If sufficient facilities for transferring goods cheaply were supplied, and if a large number of dealers, etc., could be induced to open up on some floor other than the street level—all at the same time—such other floor might have value as market space, but unless some such concerted action were taken such other floor would probably have little value as trading space in the market.

The better established retailers, apart from the large cash stores, seem to be content to purchase at as good prices as their competitors get; but the big cash stores and the small retailers buy just as close as they can.

Prices in market of any commodity may, as has already been shown, be set or made:

(a) By a process of private offers and refusals guided in large part by the generally rumored or generally known available supply and the demand, as shown by the way the available goods at the previous market were bought up.

(b) By the prices bid in public auction sales.

(c) By prices set each day by experts who make a study of the available supply and the expected demand.

The making of prices is one of the most important functions of a market and one which is becoming more important daily.

The determination arrived at by method (a) is only roughly approximate different prices commonly holding at the same moment in different markets in the same city, and even in different parts of the same market.

The constant bargaining, haggling, and persuading used in this method of price establishment consumes a great deal of time and of energy, which is not so lost in method (b); but, as pointed out, method (b), is too slow for general adoption.

Method (c) offers a chance for manipulation which is really dangerous. That it has been honestly and efficiently used by the concern that has for many years set prices in this way for the New York Markets, is attested by the esteem in which such prices are held; and that the labor of making or helping to make prices and of attending market for that purpose is burdensome is further attested by the large numbers of buyers and of sellers who use the prices so established.

The figures published by these people give the general highest and lowest prices for each article or for, where established, certain grades of each article. They do not and cannot give prices on grades where these grades have not been clearly defined and established, and they therefore give on such goods much less exact guidance than they otherwise could. Where, on certain goods the price limit as quoted shows a variation of 50 per cent. or more of the lower price for different qualities, too much is left to the imagination.

For the guidance of marketmen as to crop conditions, available supply, etc., several market papers are published. The information in these helps to extend the outlook beyond that given by the goods actually received or in transit, and has some effect in making prices of the less perishable foodstuffs.

The prices of many articles of foodstuff, especially of those which require preparation that the consumer cannot ordinarily give, are modified only to a slight degree by the action of the market where these are sold to the retailer. The consumers' demands are pretty well known to the large concerns doing this preparing, and their prices to the retailers are governed by these and by the costs to themselves, generally in distant markets, of the raw materials. Sugar, coffee, tea, flour, and to a very considerable extent meats, and all manner of canned (including bottled) foodstuffs, come under this head.

And finally a few important articles which are not given preparation that the consumer cannot ordinarily give are at present under the domination of dealers who are sufficiently powerful to, in large degree, control prices. Such are butter and eggs.

The Commission Man.—Primarily the commission man was the agent of the shipper, employed to receive the goods shipped; to cart them to market; to pick over and repack; to sell for as high a price as he was able to get; to collect the moneys from such sale, and to remit the same to the shipper.

His compensation for so doing was in some cases a set price per quantity of goods sold, but more generally as an incentive to securing higher prices it was a fixed percentage of the total gross sales price.

The commission man is employed, first, because the shipper is unable to be at market to attend to the caring for and selling of his own goods, and second, because, even if the shipper could be present, he has not there the facilities necessary for properly handling and marketing his goods.

The commission man in markets, as at present organized, thus stands usefully between the shipper and the retailer or jobber. Commission men have their patrons or customers, shippers who deal with them regularly or occasionally. They have each their lists of these shippers of each commodity handled, and when the market gives indications of good prices in any commodity they send out large numbers of notices thereof to their shippers.

The indications may be so pronounced that every commission man on the market has notified his patrons at the same time, or these indications may only be the fancy of some one commission man.

The response to these notices depends upon the relative strength of the hope of gain awakened in the shippers by the appeal of this as compared with other markets, as determined by their judgments as to the net returns to be expected for their goods.

It is hardly possible to foretell how large the shipments will be in response to

such an appeal and, in consequence, a fairly general appeal made on good judgment and in good faith, may, and often has, resulted in a flooded market and a loss for all except those shippers whose goods got there first.

Commission men may be divided into commission men proper and receivers.

The receiver is a wholesale commission man, one who receives and sells in large lots only. He does not regrade, repack, and expose for view as the ordinary commission man. He sells by sample or by standard gradings, where these exist, and to either the very large users, the large retailers, or to the jobbers.

The commission man receives and sells in smaller lots, carts, regrades, repacks, and has a stand or store in which goods are exposed for sale.

The commission man receives goods which are often not up to standard, which have often been poorly packed, poorly cared for previous to packing and in transit, which have often been delayed in transit. He sells on a market which, while it averages to certain prices in a day, rises above and drops below these average prices. He often stands between a wilful and ignorant shipper and a somewhat capricious buyer. And, even if perfectly honest, he sometimes is suspected unjustly. He is in competition for customers or patrons with other commission men, many of whom do not scruple to attract patrons by foul means where fair would not succeed. And very often where he cannot get a satisfactorily sufficient volume of business sent to him on a commission basis, he is under the necessity of buying from the producer or shipper; and thereafter of placing his own goods in competition with those of his patrons when selling to the retailers. Above and over all, he represents patrons who seldom come to market, and still more seldom take the trouble to inform themselves accurately as to the real costs of the various operations to be performed under the conditions of promptness of service compelled by the perishability of the goods and the requirements to avoid congestion at terminals and markets, but who, nevertheless, often voice the feeling that they are not honestly treated. It takes a man of extreme convictions as to honesty to continue to live entirely unperturbed year in and year out under these conditions, associating with other commission men, some, at least, of whom are not honest, yet who profit by their lack, and are even honored for their smartness.

It is no secret that many commission men are not even moderately honest, but the fault is cumulative and, as just pointed out, quite a few of the conditions which make strongly for this dishonesty are not of the commission man's making. The power of the law can, of course, be invoked to punish, but to obtain a really satisfactory working condition the producer or shipper must keep himself informed in every case as to the full details of what happened to his goods from the time they were received until sold. This the shipper is at the present time unable to do, because of the lack of records kept by the commission men.

Trucking in City Streets.—The total time required to transfer goods from one point to another is composed of two items, the times required to get the goods onto, and later to deliver them off of the vehicle employed, and the time required in transit between these points of receipt and delivery.

The times required to get the goods onto the vehicle and later to deliver them off varies greatly, not only as between different receiving or delivering points, but also as between the same point at different times of the day. While, by sufficient study, a curve expressive of the usual daily variation of this required time could be plotted for any particular receiving point, it in general is not profitable to do so, because the loss of time at receiving or delivering points can be reduced to almost any desired limit by the expenditure of sufficient money to provide the requisite facilities. If, therefore, new receiving and delivering facilities are to be planned, they should not be formulated to ideals of what constitutes fair service as drawn from previous bad experiences, but should rather be governed by an equating of the total costs of the

receiving or delivery delays, to or with the interest, maintenance, labor, etc., charges of the facilities.

As will be seen, this is properly a part of the planning of terminals.

The time required in transit: Vehicles in crowded streets must move in nearly continuous lines, one vehicle following another. The speed of any portion of a line is therefore limited by that of the slowest vehicle ahead of that portion of the line.

Where streets are of sufficient width to permit of the establishment of separate lines for slow and for fast moving vehicles, the traffic capacity of such street can thereby be much increased.

Vehicular Speeds.—From time studies made therefor, the highest rate of speed which can be expected from moderately laden horse-drawn vehicles on level paved streets is 300 feet per minute, equal to 3.4 miles per hour. This speed is a fast walk which could be made by most of the grocers' wagons which go to market.

Heavily laden trucks drawn by heavy draft horses do not make, as an average speed, over 220 feet per minute, equal to $2\frac{1}{2}$ miles per hour.

Automobile trucks can and do maintain much higher speeds. But, as speeds become higher, the clear distance between vehicles in the same line must be increased to prevent the sudden stoppage of a vehicle, causing it to be rammed by its follower.

While, therefore, an automobile truck can easily maintain a speed of 12 miles per hour, a space of at least its own length should be left between each two vehicles in the line, thus reducing the speed for purposes of comparison to about 6 miles per hour.

While the horse as a source of haulage power is undoubtedly tending to pass away, yet, within that future time to which this study must refer, the horse will still be with us in sufficient numbers to govern traffic.

Break-downs.—Delays due to break-downs seriously reduce the capacity of a street, but as these are not of daily occurrence, and when they do occur cause quite different amounts of delay in different cases, no account has here been taken of them.

The Traffic Capacity of Streets.—The width of the roadway and of the sidewalks of city streets have been regulated by a resolution of the Board of Estimate and Apportionment, adopted December 23, 1909.

Many of the city streets are not in accordance with this, but for purposes of comparison, assuming streets which are, the following table of roadway and of sidewalk widths is shown for the given total street widths (page 199).

In most places, vehicles are not permitted to cross the curb line, except at special driveways into buildings; but in a few districts the curb has been replaced by a gutter and vehicles are backed up against platforms built at the height of the truck floors above the street. This interference with pedestrians' right of way, is only permitted where the vehicular traffic is relatively the more important. The tendency is to forbid this use of the sidewalk for trucking purposes and for buildings which have a large volume of vehicular receipts or deliveries to devote a part of their street floor to driveway and platforms.

Each building has the right to have vehicles deliver goods to it. Almost all vehicles deliver goods from the rear end, and therefore for convenience demand the privilege of backing in to either the curb or the platform. Horse-drawn vehicles, when so backed in, usually turn their horses so as to obstruct as little of the roadway as possible. Automobile trucks cannot save room by this means. They are, however, usually constructed with the truck body so overhung beyond the rear wheels that the truck does not occupy more of the roadway beyond the curb than does a horse-drawn vehicle. This distance is usually about 13 feet to 14 feet.

In streets where the through traffic demands it, vehicles can be compelled to stand parallel to the curb.

While it might be that, at the times when traffic to and from a market was taxing a street to its utmost capacity that long stretches of this street were free from vehicles standing along the curb, this condition could not at all safely be assumed. For, unless such street were acquired solely as a through driveway, abutting property has the right to receive and deliver goods at any time; and a single pair of vehicles standing along the curbs anywhere nearly opposite to each other will reduce the capacity of the street materially. The longer free spaces along the curb may permit the faster moving vehicles of a mixed traffic line to turn out and get ahead of some of their slower moving leaders.

Comparatively few vehicles in use in New York City exceed a width, out to out, of 7 feet 3 inches, but there are a few which run to 7 feet 9 inches wide, out to out.

A side clearance between these widest vehicles of at least 3 inches should be figured, making an out to out width of a space required for each line of vehicles of 8 feet 0 inches.

Unless very special traffic regulations of a type not now in use be adopted, provision must be made for at least one line of traffic in each direction in each street.

Where only one line in direction of the maximum traffic is possible, the speed must be assumed as that of the heavy trucks; where two lines are possible, heavy truck will govern one line, wagon speed the second; where three lines are possible, the third line will be governed by automobile trucks.

Street surface railway tracks will prevent the adoption of a scheme of two lines of traffic in the direction of the maximum traffic and one the other way.

Vehicles, Sizes and Capacities.—The actual area on the vehicle occupied by the goods as piled is but a small part of the rectangular space occupied on the street by the vehicle and horse, including the side clearance. Thus, for a grocer's medium size, single horse, covered delivery wagon, such as is commonly used by the retailer in going to market: Area occupied by goods, 3 feet 5 inches wide by 6 feet 2 inches long, equals 21.059 feet; space occupied on street, 8 feet 0 inches by 18 feet 6 inches, equals 148 square feet; per cent. of street surface occupied by goods on vehicle, 14.2 per cent.

For a light, one-horse, covered delivery wagon, space occupied by goods 3 feet 0 inches by 7 feet from end to tailboard to seat, equals 21 square feet; space on street surface occupied by vehicle, 8 feet 0 inches by 19 feet, equals 152 square feet. Percentage of street surface occupied by goods, 13.8 per cent.

Peddler's open top wagon, one-horse, such as is used by many fruit and vegetable dealers: Area which can be occupied by goods, 3 feet 7 inches by 9 feet 3 inches, including the tailboard. There are sloping sideboards above the wheels which can be used. Counting these, the width occupied by goods may be taken as 6 feet 2 inches by 9 feet 3 inches long. Area equals 57.0 square feet. Street surface occupied, 8 feet 0 inches by 19 feet 0 inches, equals 152 square feet. Per cent. of street surface occupied by goods on vehicle equals 37.5 per cent.

Two-horse truck: Space occupied by goods on vehicle, 5 feet 1 inch wide by 11 feet 2 inches long. Area equals 56.8 square feet. Space on street surface occupied by truck, 8 feet 0 inches by 23 feet 0 inches. Area equals 184 square feet. Percentage of street surface occupied by goods, 30.9 per cent.

Large, heavy, two-horse truck: Space occupied by goods on vehicle, 4 feet 9 inches by 14 feet 0 inches, equals 66½ square feet. Space on street surface occupied by truck, 8 feet 0 inches by 26 feet 6 inches, equals 212 square feet. Per cent. of street surface occupied by goods equals 31.3 per cent.

For automobile delivery wagons the percentage of street surface occupied by goods will run upwards of 40 per cent., and for motor trucks from 60 per cent. to, in some cases of open electric trucks with driver's seat extending over the goods, over 90 per cent.

Motor trucks have smaller wheels than horse-drawn trucks, and the goods-carrying space extends out over the wheels to the full width of the vehicle.

Covered wagons are limited in capacity by the height from floor to roof or cover, unless these roofs or covers are strong enough to pile goods on. The loads on open topped wagons are limited in most cases by convenience of loading or by the requirements of stability; in few cases by the headroom available under bridges, etc.

The bodies of practically all vehicles used in market transportation are carried on springs. The resulting lateral instability makes overturning of the vehicle probable if the center of weight of the load be raised too high, as it tends to be when heavy goods are piled high on the vehicle.

This requirement, and that for convenience of loading, combine to prevent light, bulky goods from being piled much, if any, over three barrels high. Heavy goods are, around New York, seldom piled over two and one-half barrels high.

Most New York trucks are built with straight axles and the body above the axle. In Boston the heavy trucks are the so-called "low gear" trucks, having rear axles which drop or bend down vertically between and near to the wheels, leaving room for a low hung body between. The goods are thus carried closer to the ground, giving greater stability to the vehicle and more convenience in handling. Very heavy loads are carried, and three big horses abreast are quite common for hauling these trucks.

The probable composition of the lines of traffic should be arrived at from considerations of the probable conduct of the market.

Since this market is to enable the retailer to purchase directly from the producer or his agent, the commission man, there will probably be quite a few farmers' wagons or auto trucks bringing in produce. These will arrive before and will depart after the market is in session. They will not therefore require use of street at the same time as the retailers.

And, since the capacity compared with the street space occupied is greater for the farmer's wagons than for those of the retailer, the retailer's wagons mainly need consideration.

To the existing markets, with their lack of freight connections, there has been a great deal of trucking with heavy trucks from boat and railroad terminals. This would be considerably reduced, but not entirely eliminated, unless the goods brought in by steamships, which must berth at their own piers, be transported to market by railroad. At present this trucking is done quite irrespective of whether market is in session or not. But goods might be forbidden entry to market when in session.

For these reasons two sets of figures are presented in this table, one contemplating streets used only by light, horse-drawn vehicles and by automobile wagons and motor trucks; the other by fast moving traffic composed of light, horse-drawn vehicles and motor vehicles, and a slow moving traffic composed of heavy, horse-drawn trucks.

Finally, traffic in these streets is assumed to be entirely uninterrupted by traffic in cross streets. From all of this, it should be seen that the traffic capacities as given are higher than can always be obtained.

In figuring the capacity in cubic feet of merchandise carted, heavy trucks have been taken as loaded two barrels high, and grocers' wagons have also been loaded two barrels high, although many covered grocers' wagons will not permit of this loading. This has been done because the peddlers' open top wagons will load this high and have a larger percentage of goods area to street surface.

A great many foodstuffs average about 56 to 60 pounds per bushel, equal to about 46 pounds per cubic foot when measured in bulk.

These goods, packed in full boxes, would weigh only slightly less, but packed in barrels, due to the lost space between the barrels, their weight per cubic foot of space occupied would be 31 pounds.

Table No. 1, of Report of the Committee on Markets, Prices, and Costs of the New York State Food Investigating Committee, while not necessarily accepted as correct, will serve again as a basis for computation.

Translating the figures there given into pounds avoirdupois and thence into cubic feet at the rate of 31 pounds per cubic foot, corresponding to average barrelled foodstuffs and omitting milk, which probably would not come into market in market times, the total equals, cubic feet per year or, assuming 300 market days per year, 599,800 cubic feet per market day.

As will be seen from the table of capacities of streets through one 90-foot street, this whole quantity of foodstuffs could probably be carted in one hour. There is thus, so far as the mere vehicular approaches are concerned, no reason why a single wholesale market for the whole city should not be planned.

The standing space required in a single market for the whole number of retailers who might be there at once would, however, be excessive. If, of the 11,000 retailers and at least 4,000 more fruit and vegetable dealers and peddlers who come to market between 4.30 A. M. and 8 A. M., and who spend on an average one and one-half hours there, not all, but perhaps two-thirds of whom come daily and the other third once in two days, there is at one time in the market, say 40 per cent. There must be, then, standing room for 6,000 retailers' vehicles which, at as little as 148 square feet per vehicle would require slightly over 20 acres, an amount of wagon space, even if on two or three different levels, difficult to secure at any centrally located place in this city. As has been shown under heading of the Retailer, unless the retailers supply themselves with means which they do not now possess for the cool or cold storage of "most perishable" goods, most of them must have a delivery of goods which, in point of speed and certainty, is beyond what can be expected of a hired delivery service. These retailers must therefore continue to go to market in their wagons, and there must be room in the market to accommodate these wagons.

When the distance (one way) from market to store exceeds 5 to 6 miles, which distance can be traveled in about one and one-half hours, it becomes burdensome and the retailer seeks other marketing means.

Considering that the distances from a central point on the west side of lower Manhattan to the various limits of the City, measured along air lines, are about as follows:

To the north, 14 miles; to the northeast, to the east, 15 miles; to the southeast (Coney Island), $9\frac{1}{2}$ miles; to the southwest (Tottenville), 19 miles.

It should be clear that a central wholesale market cannot, and will not, supply a large portion of the retailers directly.

Where retailers cannot get to market conveniently, they have to make other buying arrangements, resulting in their having to pay more than market prices, all of which makes foodstuff costs to the outlying city dweller very high.

It is possible by the use of motor trucks and of automobile delivery wagons to reduce the time between market and store sufficiently to make one central market practical for these vehicles, and it is possible by the use of only motor trucks in market, each truck serving at least three retailers and each truck having three times the carrying capacity of the ordinary retailer's wagon and occupying only the same space as this wagon and horse, to reduce the standing room required in market for such motor trucks about 7 acres; but, even if this were supplied on three floors, the ground area required for one central market would be almost prohibitively large.

The cost of delays to trucks in loading will depend, of course, on the total per

diem costs for the trucks and drivers; the percentage of cost added to the goods onto this, and also on the value of these goods.

Thus, if a two-horse truck costing \$7 per day has to wait three hours, equal to one-third of its working day, for a load of two tons of cabbage worth \$5 per ton, there is added to this cabbage 23 per cent. of its value for a mere waiting charge, without the cost of transportation. The same truck, waiting the same time for a load of oranges, would probably not cause an addition of more than 1½ per cent.

And for potatoes this waiting would add a charge of about 5 per cent.

Summary and Conclusions.—(In what follows, an acquaintance with the deductions of the foregoing is presupposed. Most of the statements here made as such are repetitions of conclusions reached in the preceding somewhat extended discussion.)

Conditions are such in this city that a larger supply of foodstuffs of better quality and at lower prices are even now badly needed, and the demand is increasing.

To obtain the greater supply and the better quality, the producer will have to receive a greater net profit.

To lower the price to the consumer, in the face of this demand for more profit for the producer, it is necessary to do two things:

(a) Eliminate the very great uncertainties under which the producer now works.

(b) Eliminate considerable of the expense between producer and consumer which is necessary under existing conditions of marketing.

The producer's proper work is growing foodstuffs and, undoubtedly, he can best serve the world when he is free to give this, his work, his undistracted attention. He should be provided with information as to what to grow so as to best serve the world, which information he cannot collect for himself. He should be advised as to what consuming center to ship his goods to when they are harvested, so as to help to properly average the supply. He should have clear advice as to how to grade, pack, and ship, so that culls and waste stay with him where they can be of use, rather than go to a market where they breed for him only expense and reciprocal suspicions of dishonesty. And finally, he should have available to ship to a market so constituted that he will have perfect confidence that his goods, when received there, will be handled as economically, as judiciously, and as honestly as he himself, in his best moments, could do. Having this, he will be enabled to make much more total net profits than he can at present, although his goods will be selling at a lower price wholesale; and, in addition, he will be enabled to safely ship large volumes of goods which, when the to be expected gross profit is small, he now lets go to waste, unshipped, rather than take the chance of more loss.

Producers, through their Associations, have in various parts of the country attempted to do many of these things and with varying degrees of success. Their work is in all cases of value, and in some functions their labors will probably be found advisable to be continued. In other directions, particularly in the gathering of information as to what to grow, and in the giving of advice as to where to ship, there are so many unassociated producers that it seems possible that the past work of the Associations will be of most value in having prepared the minds of the producers for what otherwise would, a few years ago, have been considered a clear infringement of the producers' constitutional rights.

This problem of supplying the producers with information as to what to plant is closely associated with the later problem of advising them where to market. Both problems are more than county-wide, more than state-wide—they are at least nationwide, and to some, but fortunately a small extent, international.

The Producers' Associations have so far failed to coördinate with one another sufficiently to cope with these problems. And there are other matters of valuable information which these associations are entirely unprepared to furnish, such as ade-

quate long time weather forecasts, which the U. S. Department of Agriculture can furnish.

The U. S. Department of Agriculture is about to establish a Bureau of Markets. So far as known, its scope and powers have not yet been formulated.

It is possible that the matters of information to producers above stated have been provided for by that Bureau; but, at any rate, it could do no harm if the Department were properly urged to include these matters in its field.

The standards by which foodstuffs are to be graded, as to size, color, shape, quality, etc., and packed, the size, shape, and quality of the packages, the conditions under which goods are to be received at market, etc., are all matters which can be regulated by action of the authorities of the market in each consuming center; but it should be plainly evident that if wise standards, defining particularly and exactly all these things, were adopted by some central authority, that the producer would thereby be enabled to grade and pack his goods once for all and ship all or part to any market, diverting them en route if need be.

Proper standards and a proper inspection service to enforce these standards, and to unbiasedly report on the condition of goods as received would mean for any market adopting these measures a large preference on the part of shippers over markets otherwise equal but not so equipped. The final word as to what constitutes wisdom in this matter will not be said for some considerable time to come. Meantime, it is recommended that either a set of carefully considered standards for New York City Markets be adopted, or that such a set be, by the market authorities in New York City, proposed and urged upon the Bureau of Markets of the Department of Agriculture for their consideration as a step toward national legislation covering this matter.

The expense between producer and consumer has been shown to be largely, not in the wholesale marketing, but in the retailing. And the reason for this has been shown to be that the retailer sells the consumer not foodstuffs alone, but foodstuffs plus services of various sorts, plus a share in various expenses.

It has been shown that there are many consumers who wish these services and do not object to paying for them, but that there are others to whom this having to pay for services which they would gladly perform themselves if thereby they could save expense is a real hardship. It has further been pointed out that if the retailer did not have to include the costs of services in the prices charged for foodstuffs that he could secure for himself a better profit. Perhaps the charges for such services as delivery, the gathering of orders by wagons, and phone use, which the consumer may or may not elect to receive, should be charged for separately so that those who do not receive need not pay. This would be an economically sound treatment, tending to check a growing extravagance of often quite useless expense.

There are other expenses which the consumer can avoid by a wise ordering of his ways. If paying cash will avoid dealing at a credit store, he will avoid helping to finance others' improvidence; and more expensive still, helping to pay for goods which others have used. If he will buy closely; buy in quantity so far as is wise for him to do; buy standard goods instead of highly advertised preparations, and buy at stores which he can see are economically run, instead of at extravagantly operated ones.

A comparison made by experts of all the different preparations of the various foodstuffs, with their comparative virtues and values given in such form that the ordinary consumer would have correct and practical guidance therefrom, would certainly tend to reduce to the consumer the cost of the advertised preparations of foodstuffs.

To be of value the preparations must be given by the name or mark which the consumer will see when the goods are offered him for sale. This is a big piece of

work in itself, and when done a great deal of it would be of much more than local interest. It will not be easy to do this without incurring damage suits from certain manufacturers, unless a considerable number of manufacturers of preparations of each article agree to permit comparisons, analyses, etc., of their goods, as bought in the open market to be published. If such a partial list be published, and means be taken to bring these into the consumers' hands, the outstanding manufacturers will gradually be forced into line. Such a set of comparisons, properly made, will benefit the manufacturer in the long run, relieving him of much of his heavy advertising burden and making success lie in the direction of easily ascertainable merit rather than along the somewhat mysterious paths of fancy and prejudice.

Eternal vigilance as the price of liberty applies not only to freedom from political oppression but to freedom from all kinds of wrongs. The producer who would keep even the best planned market organization free from graft must arrange to so inspect the service rendered by his agents that wrongdoing will be too hazardous to be profitable. Right service must be rewarded and honored, and wrong service made unprofitable, or graft will flourish. In this, the Producers' Associations can operate to greatly reduce to the producer the cost of such inspection while operating with much more force to procure the punishment of the offender.

As a means of making this eternal vigilance possible to the consumer as against the retailer, semi-wholesale markets adjacent to the railroad termini would be of great importance. It is doubtful that a right-minded public begrudges the efficient retailer his profits; but this public should, even if it does not, begrudge the retailer the power to assess upon them, at his pleasure, the results of economic shortsightedness and mismanagement.

The retailers have their organizations in which to some extent marketing and retailing problems are discussed. They are well enough organized to successfully impose a heavy fine upon the wholesaler who sells a consumer. They are therefore presumably sufficiently organized to deal with the problems of separating service charges from foodstuff costs; with the advisability of cool or cold storage equipment in their stores; with the adoption of means to eliminate the purchaser on credit, or at least the purchaser who fails to pay. That they have not so far successfully done so is believed to be more because of the desirability of such actions not having been presented to them in a convincing way than of a lack of power or ability on their part to cope with these problems.

The Market Itself.—The most important part of the market is not the buildings nor the location, nor even facilities, but the organization.

Given a proper organization, good results will be obtained in spite of poor buildings, locations, or facilities.

The necessary functions of any market were outlined at the beginning of this report.

Without a market organization planned to direct and govern these various functions, disconnected markets or even different parts of the same market, if of large extent, must really be separate markets, offering different attractions to their patrons and therefore not serving in the most efficient manner to distribute the foodstuffs.

Because of transportation costs and of the hardships imposed upon the retailer by the distances, the verdict of the past that more than a certain small distance from store to market is impassable, seems properly final.

This, coupled with the difficulty of securing sufficient ground space in a near central water front location, would seem to make undesirable the scheme of one central wholesale market for the whole of Greater New York.

The markets should be so placed as to require little over 5 miles, and certainly not over 7½ miles in any direction to the limits of the territory served by them.

The location on the water front is desirable mainly for the steamboats, canal

boats, fishing boats, and smaller craft which are thus enabled to unload at market.

Steamships running in lines have their own piers and generally carry quantities of such size as require distributing among several markets. Railroad facilities are of much greater importance than are water front facilities. The railroad entering the market should be a connecting railroad, so as to give the market the advantages of all of the railroads so connected. If this connecting railroad have connection with the piers of the main foodstuff-carrying steamship lines, the markets' facilities will be greatly increased. There are at present seventeen usual railroad delivery points for foodstuffs within Greater New York, not counting the Borough of Richmond. All of these are used at times, most of them constantly. Many are not near markets, but carloads are sold, subject to inspection, when delivered at these delivery points.

Perhaps the most important two matters to be covered in the adoption of an organization for a market are the means for standardization of the goods and the means for the determination of the market price of each commodity.

Many of the advantages of sufficient standards covering gradings of any foodstuff by variety, size, color, taste, and other qualities affecting retailer and consumer have been already dwelt upon. Coupled with an efficient and uniform inspection service by the market authorities, who finally should control the application of these market standards, the producer, the shipper, the receiver, the retailer, and even the consumer are all assured of a square deal. It means introducing at one swoop, order and honesty throughout the whole path of the foodstuffs from the field to the kitchen.

It means trust instead of suspicion, and to large degree that faith on the part of the necessarily absent producer which will induce him to ship close margined foodstuffs to market.

It means a great reduction of the time and effort now spent in market by retailers and dealers in examining and sorting over goods, and it means that the goods on sale in a market need not all be exposed in the sales hall, thus making for a much more compact, and therefore in some other functions more efficient, market.

It seems proper to this control of standards that no goods should be placed on sale in the markets which have not been graded and packed in accordance with market standards and which have not been inspected by the markets' inspectors as to these, and as to condition upon receipt.

Reports by such market inspectors, properly supervised, should be satisfactory evidence to the shipper, especially as the goods would be sold by these reports.

THE DETERMINATION OF THE MARKET PRICE OF ANY ARTICLE.—It has been pointed out herein that the market price of any article of foodstuff is subject to continuous variation throughout different parts and different times of the same market, as well as in different markets, and it has been pointed out that a great many of the retailers are mainly concerned to buy at as good a price as do their competitors. If it were possible to establish a uniform price throughout all the city markets for each day in each grade of each article, it would benefit the consumer by reducing the uncertainties of the producer, it would be nearly a substantial justice, and in addition would be of considerable benefit by permitting otherwise subordinated conveniences of the retailers to control their movements.

It would be approximately just, as between centrally located and outlying city markets, both because the costs of transporting goods in quantity by efficient means for these short distances is only a small per cent. of their value and because nearly every city market would be especially favored by being closest to the source of supply of some one or more articles of foodstuffs.

It has been pointed out that there are two methods of price fixing in quite common use, one by a process of offer and refusal or acceptance, in which all can take part,

the other by the action of experts who fix the prices by their knowledge of demand and supply.

The prices as fixed by the experts can undoubtedly be the more logical and more nearly scientifically correct; but, on the other hand, if motives other than the highest secure control of the experts, the resulting bad condition may be very difficult to bring under proper control.

The two methods are quite analogous to the democratic and monarchical types of government, with this possible difference—that, while in the case of governments the democratic government may not produce as good government as the well conducted monarchy, it is claimed to be better because producing better citizens—in this case, the ethical improvement of the marketmen is not the prime desideratum in this matter of market price determination.

It is possible for the market authorities to determine quite closely how much of each variety of each article of foodstuffs, at certain prices, the city as a whole will absorb in any day in the year, of a given kind of weather and when certain supplies of other foodstuffs which are used as equivalents or substitutes for this variety are in market.

Because, as has been pointed out, a considerable of the consumption of foodstuffs depends upon the price at which they can be bought; because a considerable of eating, especially of fruits and other of the more pleasing of foodstuffs is more a matter of pleasure than of necessity, the price will help to a large degree to determine the quantity which the market can absorb. The determination of the consumers' demand is therefore not a simple problem, but it is nevertheless as capable of exact determination as are many other complicated questions in engineering and by the same methods.

It is also possible, if the market regulations require that all goods to be sold at wholesale must be formally entered for market and inspected the day previous to sale, to know the market's supply.

It is also possible for the supply which the retailers have on hand to be estimated quite closely, and the estimate checked if need be by inspection.

It is thus possible to know quite closely the supply available to the consumer and the consumer's demands.

And this information, modified in some degree by a knowledge of the approximate total future supplies, should be sufficient to enable the market authorities to set a wholesale price for any variety of any article. A determination of this sort gives the producer or shipper no voice in the matter of market price determination, except such as he may indirectly have through refusing to enter his goods until the market is believed to be satisfactorily short of supplies. It could be arranged that the producer or shipper could enter his goods to be sold only when the price exceeded a certain limit. This is practically all the voice the producer or shipper has at the present time, and this is sufficient to prevent such arbitrary action on the part of the market authorities as would wrong the producer.

It will be seen that the producer's final act of control is in refusal to sell or to produce at unsatisfactory prices, the consumers' is in curtailment to a minimum of his buying.

A determination of market price by experts of the market authorities could not then become so arbitrary as might at first glance seem possible.

In the practice of certain retailers in outlying towns in securing their supplies from the producers who are on the way to market, paying therefore on the succeeding day the highest market price established for these goods on the day of their purchase, may be found ideas of value in formulating another system of market price determination.

Here it will be noted first, that the convenience and saving of expense of not

having to go into market and haul thence the goods which were already passing through their town, is sufficient to cause the retailers to forego their possible opportunity in market to buy at less than the highest market prices and to accept market prices established by others, rather than those which they helped to determine, and second, that the bargain, so far as its determination in absolute figures was concerned, was not completed until the day after the purchase and delivery of the goods.

If it be desirable that, instead of market prices being determined by the experts of the market that their advice and information be used simply as such, but that the price be really fixed by the traders, it might be that the sales be all mainly private, for the facilitation of business, that the sale be made nominally at prices agreed upon between seller and buyer, which prices were really to be modified by the action of a market clearing-house to an average of all such private prices made during the market day for the same goods of each commodity, and that the purchasers deposit a certain per cent. of money in excess of their agreed upon private price to cover a possible higher average market price than their private price, the prices to be brought before the market clearing-house by properly worded declarations, without which no goods entered for the market might be removed therefrom.

If the price of the goods to the purchaser was not to be affected by the price he reported, he would have a tendency to report prices higher than he actually paid, first to misinform his consuming customers, and second to induce his competitors to mark their goods higher when selling to their consumers. The wholesaler, if he owned the goods outright, would have a tendency to report higher prices than actually received from the retailer so as to delude other wholesalers. And the commission man would have a tendency to report prices as lower than actually received so as to secure the difference for himself.

If, however, both buyer and seller had to sign (and even perhaps take some simple and quick yet binding affidavit, too) the statement of their private agreement, had to deposit the same with the market authorities before the goods could be taken from market, and finally, had to pay for their goods by the average market price which their written statements had helped determine, these statements would become of force and importance.

A numerical average of the market prices reported would not be just as giving the purchaser of one bushel equal voice with the purchaser of a carload. The average for any one grade of a commodity should be the sum of the products of each quantity of goods, times its private price, all divided by the total quantity of the commodity of this grade so sold on the day in question in the market.

This scheme of operation could, it is thought, be made practical, and would not cause as much delay to business as an attempt to auction off all goods, while giving the retailer and the producer a chance to know market prices quickly and exactly.

Either of these market price determinations would be a considerable advance over the present methods.

The latter of these two methods would probably require banking facilities whose hours would coincide with those of the market, and whose information and experience would be such as to make them secure in lending upon produce in market storage, and furthermore whose interests would incline them to so do.

A system of market ownership of standard returnable packages, to be rented upon sufficient deposit and adequate rental, would much simplify the package problem, enabling the packages to be sent where and when needed and stored when not, all under a central control. This would very considerably reduce the present investment in packages, and by causing the purchase of more lasting packages by using these more continually and more carefully, the expense for packages which the consumer finally pays would be much reduced; and also because the cost of packages which is often a deterrent upon the shipping of low margined foodstuffs would be removed,

this would aid to bring into market the desirable volume of these low priced food-stuffs.

The Buildings.—To design a market proportionately throughout it is necessary to fix upon, mentally at least, some maximum capacity for this market, and to design all parts for this capacity in accordance with the scheme of operation to be used.

The market having been located in a certain district, with reference to the conveniences of railroad and boat as well as street transportation, and the limits of the district which it will serve when this district is well populated having been marked by the distances through which goods can economically be carted, the number of retailers should be determined from an actual count of the number of retailers in an equal area of a similar type in a well built up portion of the city.

The standing room in market for the wagons of these retailers, which is one of the big floor space factors, will to a considerable extent depend upon the market organization adopted. For, if the retailer can come at his convenience, early or late, and can buy quickly, without disparagement, fewer retailers will be in market at any one time and less standing room need therefore be provided.

This standing room should be well lighted, well ventilated, and yet protected from strong drafts. It should afford, by wide gangways, easy access to the retailers' wagons so that the goods bought can be promptly and easily loaded at any time convenient to the retailer, and should have easy access at all times to the streets outside.

If market standards and inspection are perfected to such a point that sales of all goods can be made by description and by sample, the sales halls can be very compact, resulting in quick and sharp trading. If few standards of much acceptance hold, as at present, the sales halls will probably have to be spread out enough to exhibit all, or the big bulk of the goods entered for sale in the day's market.

If the goods are entered the day before, inspected and listed by the market inspectors, the goods need in many cases be handled but once, from car to retailer's wagon. If the goods are not sold by standard, but by inspection, as at present, so many grades are frequently mixed in a carload as to require regrading of the car in justice to the shipper and to the retailer. This means one additional rehandling, and requires room therefor and place to exhibit the regraded goods for sale.

Most markets, because of their size and somewhat central location in the district they serve, will be approached from more than one direction. It will therefore, in general, be possible to have approaches arranged so that the standing room for the purchasers' vehicles can be on more than one level, thus economizing on the ground area required for the market.

It seems probable that farmers will not much longer bring in produce by horse-drawn vehicles, but that the amounts brought in may increase, and that motor vehicles will be used for this purpose. Provision of stalls for farmers, if made, should therefore be temporary, and should occupy a space intended for the future growth of some other market function.

Lodging rooms for farmers, bathrooms, and restaurants should properly occupy those spaces, such as the upper stories of the buildings which are not required for the more important functions of the market.

If possible, the sales halls should be all on one level and as compact as possible. Whether such a market will ever become a trading center for the big staples which are now dealt in upon the Produce Exchange is problematical—in fact, it is questionable that much advantage would lie in endeavoring to mix the purchasing problems of the manufacturers with those of the retailers. But, if such were done, it seems quite plain that, since the buyers would be a quite different set of people in the two cases, the sales halls should be separate and apart.

Facilities should be provided, preferably between the market entrance and the

standing room of the vehicles, where returnable packages can be delivered by the retailers and credited.

Provision should be made for the cold and cool storage of all but non-perishable articles which arrive to be placed on immediate sale. This should be arranged so that the goods from the time of their arrival at market until their departure can be so kept that deterioration will be reduced to a minimum. There should also be some provision for the cool or cold storage of goods which are to be held for distribution throughout the year. Storage of this sort in the market will inevitably, because of the higher land rentals and of the higher costs of coal and labor, be more expensive than in storage houses located either in the producing centers or at railroad transfer points. But there should be provided enough such storage room to keep on hand a supply sufficient to tide over strikes and disasters of the usual maximum duration.

Goods perfectly well graded and packed can, for very temporary storage until placed on sale, and within the demurrage time allowed on the cars, at least, be kept on the car near the market. If these be refrigerator cars, ice will be required, and this the cold storage plant should be equipped to provide.

But, if all goods be graded and packed in accordance with rigid market standards, trackage room in market will be needed only for perishable articles, and for such proportions of the less perishable articles as the smaller retailers carry back to their stores in their own wagons. The remainder of the less perishable articles could be delivered from that railroad delivery point nearest to the retailers' stores.

It seems sufficient, therefore, if, in each market enough railroad trackage be provided to permit upwards of three-quarters of enough cars to be placed at one time, as below indicated, to contain all of the goods which that market at its maximum is designed to sell in any one day.

For the utmost dispatch in handling, it seems desirable that all unskilled persons, and all persons whose interest might lead them to pilfer, should be kept off the unloading floor or floors, and that the cars should be so placed and separated that goods can be trucked in any direction from any car to elevators or chutes leading to the retailers' wagons.

So that if the scheme of market organization which will be used in the near future be decided upon, the design of the buildings and other facilities flows therefrom easily and logically.

It has herein been sought to show how much of the expense of foodstuffs to the consumer is caused by the present haphazard organization of our markets, and how little can be hoped in amelioration from mere facilities without adequate market organization.

APPENDIX

Quotation from "Freight Terminals and Trains," by Droege, Page 2

"But, taking an average month, it is shown by the monthly statistics of the American Railway Association's Committee on Relations between Railroads that, in May, 1911, freight car performance was as follows:

Mileage of roads reporting.....	223,680
Revenue (producing) freight cars owned.....	2,174,628
Per cent. of cars in shop.....	7.83
Freight car mileage.....	1,626,664,629
Average miles per car per day.....	23.7
Per cent. of loaded car mileage.....	67.4
Average ton miles (revenue and non-revenue) per car mile (loaded and empty).....	14.2
Average ton miles (revenue and non-revenue) per loaded car mile.....	21.2
Average ton miles (revenue and non-revenue) per car per day.....	338

Since the average speed of a freight train from terminal to terminal, including road delay, is from 10 to 15 miles per hour, it is plain that 2 to 3 hours in a train will give a freight car the average mileage per day shown by the above statistics. This indicates that freight cars are in motion just about 10 per cent. of the time."

XIV. ABSTRACTS OF TESTIMONY TAKEN BY THE COMMISSION TRANSPORTATION

J. D. REMINGTON,

Special Agent of the New York Central and Hudson River Railroad Company

I am in the Freight Department of the railroad and am located at Grand Central Terminal. I have been in this position seven years. I supervise the handling of freight both coming to and going from the City of New York. The freight traffic manager has direct charge of the perishable goods coming into the New York Market. I know of the cars that are running, when they are coming and where they are going, and I assist in making the schedules to take care of the movement of them. If anyone has any complaint to enter as to manner in which they are handled, he naturally comes to me and I take it up with our operating department or our transportation department.

Perishable goods come in on several stations: Barclay Street, Desbrosses Street, 33d Street, 60th Street, 130th Street, Melrose Junction—according to the commodity and the point at which the trade wants the goods. As a rule the shipper states the delivery, although the shipper is governed somewhat by the rules regulating delivery. We take certain commodities at certain stations. Barclay Street, for instance, is a pier station with no track delivery. Any freight that comes to Barclay Street must be moved there on car floats. This station takes apples, pears, quinces, garden roots, such as potatoes—in packages, not in bulk—turnips, beets, onions, and that class of goods, which are unloaded on the pier. In the morning at seven o'clock the consignees sell them to the trade—retailers and others. No bulk goods are received there; they are all in packages.

Desbrosses Street takes peaches, plums, celery, lettuce, and the highly perishable commodities, and makes during the season a night delivery of some where they want to take the goods to their stores to sell. The market people in New York, the Fruit and Produce Trade Association, of which nine-tenths of the commission men and wholesale dealers are members, have a Transportation Committee, which regulates to some extent the rules by which that business is handled. There is no market at Desbrosses Street, only on grapes. During the fall season when grapes are running, they are sold on the pier or on the bulkhead to dealers, but there are no other commodities sold there. And all of the fruits and vegetables that are received on Barclay Street are not sold there. The receivers take them to their stores if they so desire. At Desbrosses Street there are no bonnets on the street—nothing but the pier. There is a marginal market in West Street, but it is never used. Those bonnets or hoods in West Street are in front of Piers 27, 28, and 29, which are Pennsylvania piers, and in front of the Old Dominion Line Pier No. 26, and in front of the Baltimore and Ohio pier farther down toward Barclay Street. We have no hoods or bonnets in front of Barclay Street, which are Piers 16 and 17.

The goods that come in at 33d Street are bulk goods as a rule—potatoes, turnips, and apples. There are some package goods, but the majority are in bulk. Sixtieth Street is an export proposition. Very little stuff comes there to sell. At 130th Street the receipts are very light. At 60th Street there is no restriction at all. All kinds

of goods come there, but there is no market distribution. One Hundred and Thirtieth Street is used only ordinarily for wine grape people. There are certain ones located in that vicinity that buy in the Brockton Belt wine grapes in trays and get them in in carloads under refrigeration, and they sell them out to the small wine merchants in that neighborhood. Potatoes and apples are very seldom sold there. Occasionally a car of apples or a car of potatoes may come there. We do not know 130th Street as a delivering proposition, but there is no restriction on it. If a man wanted a car of apples sent to 130th Street, all he has to do is to say so and it would go there and be delivered there.

Melrose is a general delivery point. Anything goes there—bulk, package goods, everything.

We do not make estimates of the quantities of the various commodities received at our stations and could not give them without figuring up the amounts. I get a daily report every morning of every car of fruit and vegetables that come to Barclay Street, where it is from, who for, and the particular commodity in it. But we never compile reports covering a given period of time. We now and then tally on commodities from certain sections. For instance, we are developing now in western New York a peach growing belt. It is interesting to know how that is coming along; so I do know just how many cars of peaches we had out of our western New York peach growing belt this year and where they went. Some roads compile reports by packages for purposes other than what we would require. For instance, the Pennsylvania Pier 29 is a market, and there is certain space on that pier for market purposes that is preferable to other space. Now, in the distribution or allotting of that space they are governed by the amount of business that each firm does, and for the purpose of knowing from year to year who the coming year will have first choice on allotted space, the railroad keeps track by packages of the number of packages that each firm receives, and when the year's business is done and it comes time to assign the spaces, they will figure out that some firm had the greatest number of packages and they are entitled to first choice, and so on in order of importance, determining importance by the number of packages received in the previous year by the particular firms. I do not mean to say that we cannot tell tonnage or quantity that comes by dock delivery from our record. We can, of course, do that.

The capacity of a pier, of course, depends on the rapidity of delivery. I have known, within the last four weeks, of our having 125 cars down at Barclay Street on a Monday morning. Monday is our largest day, because there is no market on Sunday and on Monday we get the accumulation. We have several times been obliged, without a hood or shelter, to unload and use the "Farm," as it is known, the space between the bulkhead and the track in West Street. I think there have been days in the last month that we perhaps used that space for 25 or 30 cars in addition to the pier. The pier can accommodate, I should say, 100 cars at once. The market at Barclay Street starts at 7 A. M. We deliver from then on as long as they want. It is the understanding with the trade that any business that cannot be put down and unloaded on the pier at 7 A. M. won't come down until the next day. It is held at the upper yards or over in Jersey at Weehawken. The trade come down to make their purchases, and when they come there at 7 o'clock the retailers and others want to find all there is. By half past nine or ten o'clock most of the people have made their selections and purchases, and gone. There is no market building there. The pier itself is covered, but there is nothing in the way of refrigeration or protection from the sun except the covering of the pier. There was a time when we used both Piers 16 and 17 for ordinary house freight—package delivery of merchandise—without confining one to fruits and vegetables, but as that business has grown, Pier 17 is to-day given up entirely to fruits and vegetables.

The trucks drive in on the pier to get the stuff there, and there is the same con-

gestion there in the busy part of the market that there is on every other fruit or vegetable receiving pier of any other road in the city. There is considerable congestion, which must result in delay in the delivery of the goods. In the busy part of the market they get blocked, as they do in front of the Pennsylvania piers. If you go down there at 2 o'clock in the morning, you will see in the busy season it will take 25 or 30 officers to keep the teams in line. The cost of such delay is of course put on the goods.

We are not troubled with delays and congestion at 33d Street, or 60th Street, or 130th Street, that I know of.

I have been around among the markets for a good many years. I have been associated with the perishable freight business, traveling all through the South and West in the growing sections during their season, so that I am acquainted to some extent with the perishable goods trade in New York City. I think that the present methods of distribution within New York City could be changed for the better so that there would be a gain in quickness.

What is known as The Bronx of New York has over 500,000 people. That is one-eighth of the people in Greater New York. Greater New York has a population of one-twentieth of the entire population of the United States. The methods of distribution in the City of New York are not what they should be. It does not seem right to me that The Bronx which, if it was a separate city would be the eighth or ninth largest city in the United States, should be obliged to be a tail to the head of Greater New York. My idea has always been that The Bronx should be treated as separate and distinct as a delivering point as if it were a city of itself located 200 miles away. There are more people in The Bronx to-day than there are in Buffalo. I would establish a market there and make direct deliveries to that market.

What is the use of a railroad pulling down over the Hudson Division, which has a funeral procession of trains all the while—the tracks are full of them—pulling clear down to New York, requiring your good people up there to take their wagons and drive down 10 miles to load up and cart their goods back to deliver to the hucksters and grocers? There is no reason why The Bronx, Melrose Junction, if you please, should not take direct from the West, from New York State, from all growing sections their products, which should never see Spuyten Duyvil and the West Side down to Desbrosses Street, Barclay Street, St. John's Park, 130th Street, or any other place downtown. They should be treated as a separate proposition and dealt with right there. I am speaking now of The Bronx because we reach The Bronx by direct trackage. I have not studied the other boroughs of the city so much as I have The Bronx. I have been quite interested in The Bronx for some little time. You know we have had measures under foot to make some changes. We have just increased the capacity of the Westchester Avenue house there so that it will relieve Melrose Junction and enable us to have more room for the delivery of this stuff at Melrose Junction. When this problem is settled, as it must be and will be by direct delivery to that great city of The Bronx, we will take one-eighth of the deliveries to Greater New York that we now receive at Barclay Street and Desbrosses Street and other points distant from The Bronx, and deliver those products where they belong. That would take just that percentage of the business out of the congested section of New York and relieve the situation just so much.

When I speak of a market I mean a railroad terminal where goods can be delivered. I have not gone into the specific kind of market. Direct delivery of goods into The Bronx would relieve the congestion on the lower West Side to just the extent that The Bronx has to come down there for their goods now.

I do not know whether it would be an advantage from a redistributing point of view if the goods that are now delivered at several points along the West Side could be carried to one delivery point. Custom regulates that. Naturally a person

would say, what has the lower section of Greater New York to do with having any of the trade down there? The people that consume the goods are not there—but the houses are down there. Concentrating the deliveries at one point has worked out very satisfactorily in other cities. Take the city of Pittsburgh to-day. Pittsburgh has a produce market at the 16th Street station. It does not make any difference whether the stuff comes from the West, from the East, from the North, or from the South; whether it comes Panhandle or how it comes. It comes into that market. It is run right into that one terminal. It is a union terminal, of the Pennsylvania lines west and east, not the other roads, but they handle probably 85 per cent. of all the fruits and vegetables in the city of Pittsburgh. You go into Baltimore and you will find the Bolton yards; go into Philadelphia with its Southwest Philadelphia Market; go into Newark with their Market Street yards—they have one central point to handle that particular commodity; that is, on the one road.

So far as I know, there has never been any disposition here to make a union terminal. Of course, things become congested. Take, for instance, the California fruit received by the Erie because of their facilities at Duane Street and their connections. The Erie has established an auction system, and naturally the orange and deciduous fruit people get goods where they are sold at auction. They just as naturally go to Duane Street for that. There are seasons of the year when so much of it comes along that the day is not long enough to sell it. We have had auctions from 8 o'clock in the morning until 7 o'clock in the evening, yet car after car was left over on the other side of the river. The auction method disposes of goods quickly.

Richmond is a B. & O. proposition. We have no stations there. If we had goods consigned to Richmond we would give them to the B. & O. to take over there. We have a station in Brooklyn—Wallabout Station. We have a car float connection but no yard. We deliver to our Wallabout Station. Of course, we have the different terminal companies over there—the Bush Dock, the Brooklyn Eastern District, the Jay Street Terminal, and the New York Dock and others—from which we receive goods and to which we deliver goods in Brooklyn. Those are private terminals. If goods originate at the Bush Docks, with their great industrial warehouses, it is loaded there in cars. We have a classification of cars over there for Chicago, Cleveland, and different points, and the cars are brought over to us at our 68th Street berth or at Weehawken, to go by the West Shore. Most of it is for the west side of the river. And that is under a contract with the terminal companies for handling. When our car goes to one of those docks it is practically turned over to the terminal company, and they handle it and pay all expenses of handling it and float it with their own floats. Wallabout, Brooklyn, is our own station. We have our own agent there, just the same as at Barclay or Desbrosses Street. Long Island City is handled by the Long Island Railroad Company. We interchange business with the Long Island Railroad, of course. If they have business from their own road that is going to Syracuse they will bring it to Long Island City, put it on the floats and bring it over to our 68th Street bridges and deliver it to us to take to Syracuse. Where shipments emanate from places like the Bush Docks, they go for the regular New York rate, without additional charge. Anything coming within lighterage limits of New York would be approximately the same. The rate from Bush Docks to Chicago is exactly the same as the rate from New York to Chicago. All of Brooklyn, Queens, The Bronx, and Richmond enjoy the New York rate.

I have thought a great deal about the better distribution of perishable foods in New York City, and I have read many articles on the subject, a great many by people who evidently, from my viewpoint, did not know what they were talking about. They condemn what they call the middleman, and, in some respects, call the middleman a

highway robber. Why, they could not do without the middleman. He is just as essential to the distribution of goods as it is essential to have some one grow the goods.

The present methods of distribution, so far as some sections taking a direct delivery is concerned—The Bronx, for instance—could be much relieved. But, no matter what you could do, in the busy portion of the year, where things have been congested for years, I do not know how you could remedy that. It has been tried by the railroads. Some years ago the Pennsylvania Railroad, when the business got very heavy this side of the river, so much so that things were congested, tried to arbitrarily force a delivery of those goods on the Jersey side. That was just simply a failure. The people would not go there. No attempt, that I know of, has ever been made by any railroad to combine with other railroads in the formation of a union terminal. All efforts have been made on the part of individual roads for the bettering of their own business.

I have for a good many years been associated with the perishable fruit and vegetable business of the country. I have been engaged more or less in the development of methods in this respect—in going into communities and pointing out to them how they might in all points benefit themselves and their own community by development of crops and diversifying crops that in some sections were neglected; where the Almighty in His wisdom had provided the facilities for rotation of crops, and there seemed to have been a missed cog in the wheel in those particular places. I have endeavored to show them how they could drop in some commodity and raise it which would result in making a continuous, rotating movement out of that commodity. I have run onto some interesting things in connection with that.

Take Long Island, for instance, with its cauliflower industry. There is a highly satisfactory climate and there is the salt air passing over that enables them to produce a wonderful cauliflower. But four weeks earlier, in Cape May county, with the salt air from the ocean blowing directly over the same soil, they can produce the same crop. By producing it there that makes the season just so much longer. The result is the doubling of produce and the doubling of the season. We did a good bit of that kind of work. We did a great deal of that development work, and we used to bring in the seed houses and the men familiar with that part of it. Of course, the railroads, with their increased speed and increased refrigerating facilities, have made the seasons very much longer. For instance, there was a time on strawberries when the season for strawberries was only six weeks long. That was all the time that we could get strawberries. Now you start in in February with the Florida strawberries and you have strawberries until the middle of next July from northern New York. This works two ways—to the advantage of the producer and the consumer and also to the advantage of the transportation company. In July the same cars after refrigeration are taking berries south from northern producing states that in May were taking them from North Carolina north to those same points. The methods used, and the increased speed, and the entire situation make a very interesting study.

Distribution.—The distribution of a crop from any large growing section is interesting, not as applied specially to the distribution of New York City and its various places, but distribution itself is intensely interesting. The word distribution covers a lot, and regulates, to a certain extent, this matter of the cost of high living. The producer naturally must make money. If he doesn't he won't produce. The railroads are anxious for the grower to make money. The more he makes the more his growth will be. The greater his growth the greater the quantity to be shipped. The greater the quantity shipped the more money there is to the carrier and, naturally, the better the price to the consumer.

Now, on the question of railroads: It is doubtful if railroads get proper credit

for the part they take in the development of the agricultural sections. I remember having been the pioneer in the North Carolina strawberry growing belt. I went in there a number of years ago and found that 400 cars of strawberries from North Carolina were distributed to only 12 markets. That then was the largest year they had ever had. I happened to be in Wilmington, North Carolina, at a meeting of the directors of the North Carolina Fruit Growers and Truck Growers' Association. When asked by them whether I had any suggestions to make to better their condition I told them I did not come up there to run their business, but that the thought occurred to me that they did not give their crop a wide enough distribution. I told them that 400 cars to 12 markets was not enough markets. You can glut New York just as easy as Binghamton, New York, by sending too much fruit there, and when too much fruit goes to any market the prices are bound to go down to a point where money is lost by everybody. I said to them, now send your goods to more markets, and then and there we took up the task of increasing the distribution. Nine years after that, remembering when I first met them that they shipped 400 cars to 12 markets, I had the pleasure of knowing that that year they shipped 3,200 carloads to 82 different markets. That was a pretty good result and it was entirely due to co-operation on the part of the societies, the railroads, and everybody to make a proper distribution. The result was entirely satisfactory to the growers and to the consumers and to the carrier. Everybody was benefited. But 82 markets was not enough. We had 3,500 carloads of peaches out of western New York this year on our rails. We sent them to 275 markets. That is distribution.

It is known to-day that there are enough trees planted and not bearing in western New York to make possible five years hence, if it is a good peach year, the necessity of our assisting in the distribution of 10,000 carloads of peaches, and that is 1,000 cars more than was ever moved out of a peach producing section in the world in one year. Fifteen years ago Delaware shipped 9,000 cars in one year. That was the greatest number ever shipped from one section. Two years ago Georgia shipped 7,200 cars. That is the second largest year. So you see we are in line in a very short time to be up to the point where we are going to be away up top among the peach producing sections, but, in order to be that, the railroads must keep pace with the times and help toward finding places to ship those peaches. That is one of the functions of a railroad corporation that the public does not appreciate, and yet which costs the railroads enormous sums of money every year.

We suggest the places and assist in creating them to the extent of even inducing men to go into the business. Of course, the shipper has his own option as to where they shall go. I remember one place where, in a good city in our eastern states, they had no commission men. The city was big enough to take a carload of North Carolina berries every other day, but there was no one there to handle them. I went to that city. I went to a wholesale grocer and asked him why he could not go into that business. I said, here is good money for you and there is no reason why you cannot pick up a couple of thousand dollars this year right on that. He said, that is out of our line. I said, is it any more out of your line than to handle cold storage products in connection with a butcher business? He commenced to think. He said, how can we do that? I said, there are several ways—you can buy the goods outright or you can receive them on consignment and sell them for a commission. Your city ought to be on the map and ought to be a receiving point. He got on the map. And that city has taken anywhere from three to five cars a week of North Carolina strawberries every year since that time, thanks to the railroad for suggesting the way to the receiver and to the shipper—but the railroad got no thanks for taking that part in it.

We have more of a problem to solve assisting in the development of the agricultural regions than the average person understands. You have read of our farm

trains. They are our educational trains that we run. It was my duty as special agent, I should say it was my privilege and pleasure as special agent, to be sergeant-at-arms and conductor of those farm trains run through agricultural sections. And it was indeed a pleasure to hear the Cornell experts and others explain to the farmers things they did not know and listen to the questions by persons about what they wanted to know. That was most interesting. It cost us a lot of money, but it was money well invested. It was sowing the seed. We commence now to perceive where benefits are coming from and that the communities are bettered.

If a producer can be assured of a good market he is likely to produce more goods. If he finds he has made money on a 10-acre peach patch this year, he is induced to put in five acres more next year, if he thinks it will pay him to do so; but, if he lost money on them this year, he would not be so apt to increase his acreage. A good, steady-priced market, the price being such as to enable the producer to realize a reasonable profit, is, of course, the ideal thing. Nobody expects, in these days, to get rich on a farm the first year, but he does not want to lose money on it.

I do not know what percentage of perishables is brought here by the different lines. Of course, the southern produce, the all-rail, is largely brought by the Pennsylvania. But, you take Norfolk, Virginia. That is, for ninety days in the year, the largest shipping station of perishable freight that there is in the world. Ninety-five per cent. of this comes here by water over the Old Dominion Line. Sections, according to the commodity, differ. If Georgia this year has 4,500 carloads of peaches, probably 1,500 of them, or one-third of the crop, will come to New York City. In our estimating our western New York peach belt this year I was keeping tabs to see how close New York came to getting one-third of the western New York State peaches. They did not do it. They only took one-fifth. Now conditions differ according to other peach crops. Western Maryland and New Jersey have peach crops. Connecticut did have last year, but not this. Those things are regulated by seasons.

It is a hard matter to tell how this question of distribution of products to Greater New York fruits and vegetables can be handled to the best advantage. You take downtown, where the markets are now, with the Old Dominion Line and the Desbrosses Street, our pier, and the Clyde Line and the Ocean Steamship Company and the Baltimore & Ohio and the Central Railroad of New Jersey and our Barclay Street pier, etc., they are all there. That is where the commission houses are, that is where the stores are, and that is where the trade is. It is a long way from the places where the stuff goes to be finally disposed of. To some it would appear ridiculous that everybody has to come down to Barclay Street after apples; and to Duane Street after oranges; and to Pier No. 29 for their southern truck. But that is a condition. It is there. The dealers are located down there. It would be a pretty hard proposition to get away from there. If we tried to move the points of delivery farther up the river I don't know whether the trade would follow or not. I know that every time we have made any endeavor to go west, as Horace Greeley said, we have had the entire trade opposed to it. In regard to The Bronx I am speaking only for the New York Central Railroad. We reach The Bronx, have plenty of ground, and go there direct over our own rails, and we have a place at Westchester Avenue to take care of merchandise business with increased facilities; and we have the great Melrose yard for track delivery and for a market house delivery, making a market in an open house there the same as on Pier 29. Personally, I would like to see Melrose Junction put on the same footing as Pier 29 is to-day, and I would like to see some of the large commission houses downtown have branches established up in The Bronx to sell directly to The Bronx their goods, so that the people would not have to come 'way downtown for them and haul them back there. Those are my personal views.

Of course, there are several schemes of a market proposition for The Bronx.

There is a possibility that a market could be made up there that could be supplied not only by our direct railroad connection, but could be supplied by all other railroads by the water connection. Of course, just as much as you make a direct delivery to The Bronx you are relieving the downtown section. If, in proportion to its population, you can deliver directly to The Bronx all products of this kind consumed in The Bronx, you would relieve the congestion downtown to the extent of one-eighth, and even more than that. It is greater than that because you must figure on Yonkers and Mt. Vernon and those places where they all come down just the same as the dealers in The Bronx. If you go up to Van Cortlandt Park at any time at nine o'clock and stand there you will see dozens of teams coming from Yonkers to Pier 29 and Barclay Street to get their wagonload of stuff which they haul back up to Yonkers to sell. If we had a market at Melrose Junction they would not have to go any farther than that. We would like to see them get carload shipments directly to Yonkers, so far as that is concerned. Yonkers, you must remember, is a city of 80,000 people, and abundantly able to stand on its own bottom. It ought not to be necessary to pass by Yonkers to get stuff delivered there for sale to customers in Yonkers. How absurd it is to bring goods directly through Yonkers away downtown and then require teams from Yonkers to come downtown, get the goods, and take them back to Yonkers. But you will see team after team coming down from there, making a 20-mile haul, to go back to be huckstered out at your door at The Bronx and in Yonkers.

There is business enough in The Bronx for the establishment of an auction house for oranges. If Buffalo, New York, with less population than The Bronx, can have one; if Cleveland, Ohio, has two; if Detroit can have two; if other cities of the size of The Bronx can have one or three auction houses which can live, The Bronx is certainly big enough to have one. And that would relieve the downtown section to just that extent.

We would be glad, indeed, to run a Bronx train from the West Albany yard directly into Melrose Junction, McComb's Dam, or any other place agreed upon, just as we would to come to Spuyten Duyvil, take the West Side tracks and go down to 72d Street yard to float down to Desbrosses or any of the downtown stations. We could make just as quick a delivery at the same rate and we would be glad to do it.

Of course, different cities have different hours for market purposes. In Boston where the open market is in Faneuil Hall the teams back up to the cars and are loaded with perishable fruit and cannot get out of the yard until the bell rings at 6 o'clock in the morning. Then the gate is thrown open and the teams go up and back up to the street and the market is on. In New York City at Pier 29 when perishable goods are coming in from the South, the market is one o'clock on highly perishable goods and three o'clock for ordinary fruits and vegetables. At Buffalo, New York, the market is one o'clock in the afternoon. Baltimore has a two o'clock market. There is no early sale in Baltimore. If they wanted to establish in The Bronx the same market hours that the downtown houses have there is no reason why they should not; nor is there any reason why they should not establish a different hour. That is up to them. You could have a market at five o'clock, at eight o'clock, three o'clock, one o'clock.

The point is, how to reach the point of distribution. Of course, if you get a McComb's Dam market, which is on the carpet now, where you have a rail connection from us and a water connection from everybody else, then you have that solved. If Melrose Junction was an open track delivery and market sheds were there so that goods could be sold as on Pier 29, the question of getting your stuff from the South in the winter months coming in here by the B. & O. and the Pennsylvania Railroad to that market is an open question. I do not think getting them

in over the New York Connecting Bridge would be a difficult matter to handle. If you had your market at McComb's Dam it could be floated around there. We could not now bring mixed carload stuff around from Barclay Street. Barclay Street is not a track station on our road; it is a float station. We don't want the stuff to go to Barclay Street at all, but to go direct to The Bronx from the point of origination.

There are a lot of people who attribute the high cost of living to the middleman, and try to do away with the middleman. My thought is that they are on the wrong track. Middlemen are essential in assisting distribution—as essential as the railroads. The farmer would make very poor headway under the postal service or parcels post in trying to sell direct.

J. G. JUNE,

Superintendent of Terminals, Erie Railroad

I have been connected with the Erie Railroad about four years.

Our terminals in New York City are as follows: Pier No. 7 on the East River, Piers 20 and 21 on the North River, Pier 39 at the foot of West Houston Street, 28th Street Station, and 49th Street Station, Wallabout Station in Brooklyn. We have no terminals in Richmond or Queens, but in The Bronx a contract terminal at 131st Street. At Pier 7, East River, we deliver package and carload freight; no perishable goods except carload meat. That is mostly a carload delivery. At Pier 20 we deliver citrus and deciduous fruits for the California Fruit Association. There are two auction rooms on the pier and sales are conducted there. At Pier 39 we make carload deliveries of merchandise, but no perishable goods. At the 28th Street station there is a track delivery of perishable goods in bulk—in carload lots. Apples and potatoes are brought there in bulk. No perishable goods are delivered at 49th Street.

We keep track of the deliveries made at Piers 20 and 21, and make monthly compilations. Pier 20 is not at all times big enough for the shipments that come. This year at times we had more than we could put on the pier. The capacity of the pier is about 96 cars and the bulkhead about 18 to 20 cars—about 118 cars in all. When there is more than we can handle we keep the surplus under refrigeration until the next day. Sometimes it is left on the float and tied to the pier, so as to be ready for unloading the following morning.

We do not have anything to do with the trucking from the pier. The time of greatest congestion on the piers is in August and September and sometimes the first part of October, whenever there is an unusual movement of fruit. These congested periods naturally result in delays in delivery. I cannot say whether such delays result in much spoilage, as we deliver the goods on the pier and then lose sight of them.

I believe that too much concentration is sure to make delay, but it seems to me that establishing more facilities cannot help but eliminate a good deal of the delay and congestion.

The perishable goods delivered by our road are apples, peaches, pears, grapes, onions, celery, and potatoes. During my connection with the railroad the trade in perishable goods has increased. Last year was the heaviest year we have had—I suppose we had about 25 per cent. more than in any previous year. The trade seems likely to grow as the city grows and the congestion to increase unless more facilities are provided. We figure on an extension of our own operations to relieve our own congestion.

Last fall, to relieve conditions, we opened a pier at Pier 10, but the effort was lost entirely because the consignees would not consign their shipments to Pier 10. If

they could not have Pier 20 they would not have any. So we did not get much of a result except some shipments of onions and some grapes. We turned merchandise to Pier 10 in our effort to take care of the congestion in fruit. We sent freight which we got on Pier 21, which is a merchandise pier, to Pier 10 and then made room on Pier 21 for the fruit shipments. Pier 20 is a fruit pier—it is equipped with heat.

A union terminal, if it helps any road, would help us, but I doubt if a union terminal is going to relieve the situation. We have too much at one point now. We have, it seems to me, too much business in one place. Instead of that it ought to be distributed. If we can distribute our business to all our different piers proportionately to the business—the customers in the vicinity—our congestion would be eliminated entirely, but we cannot do that. You cannot establish customers. We have not been able to make them go where they did not want to go. Of course, we have to deliver goods where they are consigned. A union terminal will help if you can get the shippers to consign to it; but, if the shippers would not consign to it, it would not do any good.

W. C. EASTMAN,

Special Agent of the Manhattan Division of the Pennsylvania Railroad

I have been connected with the Pennsylvania Railroad nearly 32 years and have been special agent since 1901 for the New York section in the handling of freight and piers. For the past 25 years I have spent a great deal of my time looking after the movement and operation of fast freight and special freight trains, and our service in handling perishable freight. We furnish transportation for perishable goods all over the United States—from California, Arizona, Texas, the South, New Orleans, Mississippi; from every State, almost, in the Union, but the vast amount of it comes from Florida, the Carolinas, Georgia, Delaware, Maryland, and the Norfolk district. The very large percentage of it is what we call strictly the southern perishables. The highly perishables which come to this market, such as peaches, pears, etc., from north of Cape Charles and north of Baltimore, are delivered in our yards in Jersey City. How much of that comes through New York I cannot say. The same highly perishables from south of Cape Charles and Baltimore are delivered principally to Pier 29, North River, near Desbrosses Street. Highly perishables are delivered in Jersey City; ordinary perishables at piers 20 and 29, and some also in Jersey City. By highly perishables I mean peaches, berries, cantaloupes, early apples, early onions. We do not deliver them in New York City because we have no facilities there to do so. If we could get the facilities we could make the deliveries here.

Up until 1901, for instance, we delivered watermelons at Pier 29 in New York City. I think in the summer or early fall of 1902 we had to commence and deliver watermelons from the cars on the tracks at the Jersey City yards. Pier 29 was not large enough to take care of the increased perishable freight and the watermelons too, and, as watermelons are not highly perishable freight, we transferred them to Jersey City.

The delivery of perishable freight is not confined to piers. We have had it delivered actually from the street on West Street, in front of the hoods and north and south of the hoods. We deliver in New York City at Pier 29 and from the street in front of Pier 29, and at Wallabout, Brooklyn, by car floats. Very little, if any, is delivered at the regular merchandise stations, at our 37th Street and 38th Street yards. We bring all kinds of food products to New York—canned goods, flour—almost everything. Cereals are delivered at Piers 1 and 4, 27, 28, 37th Street, North

River, and 125th Street, Harlem River. We take very little up to our 125th Street Station. It is within the lighterage limits and takes the same rate. We have no carfloat connection on The Bronx side. We earn no more in delivering to The Bronx and charge no more than if we had a terminal there. On the Brooklyn side we have the Brooklyn E. D. Station, at the foot of North 4th Street, and the Wallabout Station in the Wallabout Basin, and we deliver at the Jay Street terminal, the New York Dock and the Bush Docks.

The present facilities are adequate for the traffic with the exception of when we have some of these fearful rushes, when the lines will be adequate to do the work but the terminals will not. In other words, the markets will not take care of the goods. Then there are the changes in demand. Take, for instance, watermelons. They will come here and be put on the tracks for delivery in Jersey City, and if you have a little cool weather people do not want watermelons; they won't take them. But the watermelons, nevertheless, will keep coming in and are still being shipped from the South. As a consequence you are liable to have 150 to 200 carloads of watermelons on hand. They won't take them as fast as they are shipped and received here. I hardly know how you can remedy a situation like this. You certainly cannot compel a man to eat watermelons if he doesn't want them. But, if I were a shipper and found the market off in New York, I would certainly try to ship to some other place where I could get a market for my product. We can hardly force things on an unwilling market.

Where we have to keep the cars in our yards it leads to congestion. We add no charges for that. The largest proportion of melons are shipped to a consignee who pays the charges. They are shipped on commission. As I understand it, he pays the freight charges, deducts them from the price for which they sell and deducts his commission and makes a corresponding return to the shipper. If there is congestion, the delay cost comes out of our pocket, of course. We would be benefited if terminal facilities were made better, so that the terminals would be sufficient. We would be benefited if there was a terminal where we could run our cars and unload them speedily.

It is difficult to say what effect facilities will have on marketing. We will load up Pier 29 with perishable freight and market men will come there. There will be any number of them to buy, but they will wait in the hope that the prices will go down. They will not take the goods quickly. They have to buy quickly when the time comes, but they cause much congestion by waiting and holding the stuff on the pier, where it congests the pier and compels us to hold stuff on the other side that ought to come over and be unloaded. That congestion has a tendency to diminish business. It certainly diminishes the amount of freight you can deliver, and to that extent it diminishes the price for the producer to send stuff in here and makes a poorer market for him.

There are two markets at Piers 27, 28, and 29. The first market in the California season is opened at 1 A. M. That is for peaches, berries, cantaloupes, etc., and the stuff is put on the front of the bulkhead. When the vegetable market commences it is opened at 3 A. M. and that is put on Pier 29 under the hoods and out in the street and north of Pier 28 on the bulkhead. There is a congestion of wagons out there until the morning, until they get rid of the biggest portion of that stuff. All this congestion leads to higher prices and less consumption. Nobody is benefited by these conditions. A terminal market, I should say, would be a relief if it were large enough and were located conveniently. It would hardly be unless it was put on the waterfront where the floats could get to it quickly and get unloaded and get away. A terminal market would need to be accessible to boats and trains.

The receipts of highly perishable goods start in the latter part of March and

begin to get heavy, and then run heavy up until the middle or toward the latter part of September. The very heaviest work of the year is in May and June. They come all the year round, but those are the heaviest portions of the year. There is no time when we are not receiving perishable freight, and during other times of the year other railroads further north are bringing in perishable goods, so that there is a succession the year round of perishable goods coming in from the different roads. The season begins in Florida and we are running some little stuff from Florida now (January). Then we get in a second crop of vegetables before the Carolina stuff begins to come. Then the Norfolk comes along. So I should say that a large terminal market would have a continuous, all-the-year-round succession of perishable goods coming in over all the railroads; but it would have to be a very large market. I think it would have a tendency to establish prices and make a continuous supply and demand the year round.

If the causes of loss in delays, congestion, etc., could be eliminated, the producer would be likely to get more for his produce, and that would encourage him to raise more. That would benefit him, the carrier, and the consumer.

If this freight were run into a terminal market that had refrigeration that would save re-icing. That is done by the shippers and at the shippers' expense at the present time and that expense could be done away with under improved circumstances. The re-icing charge is \$2.50 a ton on our road. It is actually done at a loss to the road. We have to shift the cars from one part of the yard to another to re-ice, and shift them back again to be put on the pier. The compensation doesn't pay us for it, but it is one of the necessities of the business. It also means further congestion of our terminals.

There is a demurrage charge for cars kept over in Jersey and that is covered by a tariff which I can send you. It is filed with the Interstate Commerce Commission. The regular demurrage charge is \$1 per car per day after 48 hours. We have had to hold watermelons at Jersey City in the meadows 50 or 60 cars at a time until they could be accommodated on the tracks in Jersey City. We have had to put embargoes on their shipment because we had such an accumulation. At times the commission men have not been able to handle them because they have not been able to get them in the market, on account of congestion in the market, and because there was no place to receive them. I have known cars to be held in the Jersey meadows a week or more. It is not a frequent occurrence, but it is an occurrence when you have a congestion, as we have had every season for the last four or five years. All these delays tend to raise prices here and discourage the producers.

When cars arrive here and the contents are in such condition that the consignees are forced to refuse them for freight charges, they are passed on by the health officers and, if there is anything fit for sale, it is turned over to a commission man to sell; if not fit for sale, it is taken off and destroyed. Wherever salvage is obtainable by the railroad company the company does obtain that salvage by selling the contents of the car and getting what is possible to get. But that is governed entirely by the health officer, who determines whether the stuff is fit to sell or not. If we had proper distribution in New York there would be no such delay in Jersey City. Where the cars are slow in moving, the cars received first are put on the market first, so that, in the case of watermelons in the congested season, you will find for days and days, while fresh cars are arriving, the market is getting the older cars out of condition and by the time the fresh cars get their proper position, they are also out of condition. The delays here do not come from any other source but the lack of terminals. Our road is adequate and has no trouble except at terminals.

H. H. BENEDICT,

*Assistant General Freight Agent of the New York, New Haven & Hartford Railroad
and New England Navigation Company*

I have been in my present position a little less than a year, but in the business for seventeen years. I have been in the employ of this railroad for seven years, handling the general freight business of the company from a traffic standpoint. I am located at Pier 14, North River.

Our delivery point in Manhattan for railroad delivery is Pier 39, near Montgomery Street; our Harlem delivery is at 132d Street and Lincoln Avenue, in The Bronx. The boat line deliveries, with which we work in conjunction, come in the New Haven at Pier 27, the Bridgeport Line at Piers 27 and 28, East River; the Fall River and Providence Line comes in at Piers 14 and 15; and the Norwich and New Bedford Line at Pier 40. Our lines serve New England principally.

Some two years ago I became much interested in the development of the produce industry in The Bronx, with the idea that The Bronx, which is, perhaps, the eighth or ninth largest city in the country, had no market for produce to speak of. Merchants up there had to come downtown. So we built The Bronx produce house and built it about 1,100 feet long in 24 sections, and we have endeavored as far as possible to put in rates with all railroads in the United States on a flat New York basis. That connects with the great Pennsylvania system and puts almost the entire country, except some of the nearby points, on a flat New York rate with that market. In the past we have handled principally Maine products, potatoes, onions, turnips, but it has been difficult for us to develop a market up in The Bronx, although the facilities are all there, because The Bronx merchants come down here where they can get all kinds of goods in the market. It is the disadvantage of having our market on the single line. But in August of last year we handled quite a large quantity of produce in The Bronx where the year before we handled nothing, due to the fact that we had rates with the Pennsylvania on a New York basis. We also make carfloat deliveries in the Brooklyn Eastern District, Northeast Street, New York Docks, Bush Docks, and also Warren Street, Jersey City.

Our heaviest traffic has been the marketing of potatoes in The Bronx during the fall and winter months, but in the general produce business we hope to maintain a market there all the year round. There would be no difficulty in our road delivering goods to a terminal market up there if the connections were feasible. We would want to be assured of good facilities. So far from there being any objection to it—I have been going to your meetings for two years to keep track of it; we are anxious to work with you. Our road would benefit by taking goods out of the market as well as bringing them in. We might have a sale of goods from there to a local point like Bridgeport or New Haven. So it would be to our advantage to have just such terminal facilities in The Bronx. Our deliveries from the market, of course, would continue the year round, while our heaviest trade now is bringing goods into the market simply during the winter months. The more trade out of the market, the bigger it would grow and the more supplies would be likely to come in, and, as a consequence, the people could get their goods cheaper. There would be more encouragement to farmers to produce and send their goods in.

At present we are not bothered with terminal congestion in The Bronx, as far as produce goes. We have gone ahead of it, perhaps. We have almost too great facilities for our business. The street facilities for getting into our yards are very fair. We have an entrance at the lower end of our yard and a gateway at the upper end, and the traffic through that gateway we intend to encourage. But the streets are not in very good condition there. To be perfectly frank, the only trouble

with our market there is that the trade comes down here and does not come to us as much as we hoped it would, although we have practically a New York rate with all lines except the Jersey Central and the New York Central. We will be glad to take in all the other roads into our terminal at a slight return to us in order to encourage the produce business there.

WHOLESALE

JOSEPH E. REID,

Produce Commission Merchant

I have been personally in this business about twenty years; my firm has been in it for 55 years. We handle goods on consignment from the various seaports and different sections of the country—Porto Rico, Cuba. We take in practically everything in the produce line. We do not specialize in any particular commodity, but handle all lines of goods in varying quantities at different seasons of the year. At some seasons of the year we, of course, handle very heavily in one line and other things at other seasons of the year, depending upon the season and nature of the product. There are seasons of the year, of course, when certain commodities are not in the market practically at all. But we take in practically all lines during the various seasons of the year. Our house probably handles \$1,500,000 worth of produce in a year, wholesale value.

In nearly every case the goods are shipped to us directly by the producers. There are some cases where a man may purchase goods at the point of shipment and ship them to us on consignment. We sell at wholesale by private sale. We do not sell at auction at all. Various receivers sell produce of various kinds at auction—apples, potatoes, fruits, including oranges, pineapples, grapefruit. There are three or four concerns that act as auctioneers. They have auctioneers on the Erie Railroad dock. There are auctioneers that handle a great deal of Porto Rico fruits and vegetables and that handle the goods for the receiver—licensed auctioneers.

Railroad delivery consists of the placing of the goods in our hands, in our care, by the railroad company. Railroad delivery to the purchaser means the delivery of an order to him for the goods. The railroad delivery here in New York on the Pennsylvania Railroad, for instance, would be the placing by the railroad company in the department of each receiver the goods assigned to him. That is what I consider to be the railroad delivery to us. The cars are brought over from Jersey City on floats owned by the railroad. Their own men put the goods on trucks and bring them out to us. The goods are then right in our care. There is no railroad delivery by automobile or horse-drawn trucks in the city.

The goods are shipped to us on consignment and the commission merchant to-day who has to handle these goods must do so to the best advantage possible for his shipper. There are very crude ideas about what a commission merchant is. In the first place, the commission merchant is in competition with all other commission merchants. In some cases the goods are divided by the shipper and each commission merchant probably is doing his utmost to obtain the highest price he can for his particular shipper, to get the best net results. There is a vast difference, however, between the price charged by the commission merchant or the price at which he sells and the price paid by the consumer.

We have some goods that are delivered to our store—potatoes, we will say. They will sell at a certain price at wholesale. A bag of potatoes averaging 180 pounds will sell perhaps for \$2.25. That is only about 1½ cents a pound. Those potatoes may be sold to what might be classed the jobbers. The jobber has to take

them to his particular store and dispose of them in a great many cases by small measure. He sells them to the retailers. He, of course, expects to make a certain profit besides the handling of his potatoes and cartage. The grocer then sells them to the consumers. I have bills where potatoes costing \$2.25 by the bag of about 180 pounds, costing therefore about $1\frac{1}{2}$ cents a pound, were sold by the grocer four quarts for 25 cents, or about $6\frac{1}{4}$ cents a quart, whereas they did not cost originally over $1\frac{1}{2}$ cents a quart. That would be \$5 a bag, where at wholesale they cost \$2.25. There are about $2\frac{3}{4}$ pounds in a quart.

I want to show that these things are not faults for which the commission merchant is entirely responsible. The so-called high prices being paid to-day are the result of the additional charge made by the retailer. Sweet potatoes cost on the average \$1.50 to \$2 a barrel; that is not over 3 cents a quart. I find that the retailer charges $12\frac{1}{2}$ cents a quart. Of course, in all these articles considerable has to be allowed for waste and additional costs after the goods leave the commission merchant. Cauliflower sells from \$1.50 to \$3 a barrel; that is practically 6 cents a head, and it retails at 20 cents. Where they cost 9 cents they retail at 30 cents. That is an advance of nearly 300 per cent. Then again, take the condition of our onion market. At the present day (December, 1912) onions are practically a drug on the market and the price at which the commission merchant will sell onions is about a cent and a half a quart. I have bills where at the same time the retailers have charged 10 and 15 cents a quart.

Of course, the retailer has considerable in the way of loss that the consumer does not realize, because he is unacquainted with the causes of that loss. For instance, he may buy corn on the market for \$1.50 a hundred. Every housewife when she goes there examines the corn, and, if the corn does not suit her after opening it, she throws it back. The next housewife does practically the same thing. Of course, a certain portion of that wasted or injured product has to be disposed of at a price way below the regular price. I am only saying this to account for the difference between the price that is paid to the first handler, the commission merchant, and the price that ultimately is paid by the consumer.

Then again, take the crops in the different years. The price of goods varies. A good many consumers cannot understand why they have to pay more at one time for goods than at another time. I claim that is largely due to supply and demand. Some seem to think that those two words should be put on the shelf, but I think those two words and the weather conditions have a great deal to do with prices obtained for goods to-day on the market.

I do not know that I would care to say that delays in the delivery of goods here at the terminals help to add to the cost of these things. For instance, I have figures to-day of one line that has handled a maximum of 14,000 carloads in a week. On Sunday night they unloaded 314 cars; the other five nights of the week they unloaded an average of 220 carloads. They say that had they unloaded or had to unload 300 carloads every night the market could not have held up, the prices could not have held up and the market perhaps would have become glutted. The goods would have been allowed to stand and would not have been disposed of, and the loss would have been very great. If there were 314 carloads unloaded Sunday night and the trade could only take 225 or 230 carloads, you would have from 50 to 75 carloads to be held over on the dock until the next day.

If prices were lower they might take them off, but that would lower the prices of all of them. That might be of benefit to the city, but not to the farmer. Sometimes the farmer could afford to take less for his product per unit if he could sell more goods. It is possible that that would bring him in a greater gross return. Sometimes the condition of the market, due to the immense quantities coming in, is what we call a glutted condition and the goods will not move. There are no means

of handling them so they can move. If the trade will take the goods off fast enough there will be no delay. The railroad company claims that, if they could unload 314 cars Sunday night and the yards and docks were not congested, they could unload 314 cars on Monday night.

Trucks are often delayed. Sometimes a truck will have a number of parties to call upon for its goods. The truckman may be delayed by some one ahead of him. I do not know that there is any unusual congestion along those lines.

On this question of the 314 cars unloaded in one night: The capacity of the piers is not large enough to hold 314 cars unloaded at once. If they were absolutely clear of all material they could not unload 314 cars at one time and place them on the piers and under the bonnets. Part of the material has to be removed before the rest can be unloaded. There is considerable variation in the value of the commodities unloaded at 1 A. M. and the same commodities ready for delivery five hours later. The later price is considerably lower when the market hours are practically over. If the market opens at one o'clock the buyers are there and ready to buy. They want the goods on their stands as early as possible and they pay much higher for the early delivery than for the goods obtained later in the day. The market hours vary according to the season. Fruits open at the earlier hours, at 1 o'clock; produce about two hours later, in order to give an opportunity for the fruit to be moved out of the way, because it is more perishable. In order to get the best prices, delivery must be made in the early market hours. And, if the volume of goods is not delivered during those hours, the supply is shorter than it would be if they were delivered before the market hours. The supply being shorter the prices which retailers charge will be larger to the consumer. There is an increase in the price to the consumer by reason of the lack of handling facilities. There are not handling facilities sufficient to take care of these goods in the profitable hours to have them unloaded all at one time. If the goods could all be unloaded promptly at the same time, I think the prices would average considerably lower.

The necessity for early buying is prompted largely by the buyers from outlying districts who are compelled to make their market at an early hour. The price largely regulates the quantity they buy. If the prices are 10 or 15 per cent. lower to the earlier buyer he would naturally increase his requirements proportionally. So, if all the goods were unloaded and ready for delivery at the one hour, while the price would not be as high, a better average price would result. There would not be any low glut price. There would be a fair average price that all consumers would get advantage of. That would undoubtedly increase the quantity of foodstuffs consumed. The average prices being better, it would result in benefit to the farmer, and, as the farmer raises his crops according to results, he would probably raise more.

So better handling facilities would result, in the first place, in lower prices for the consumer, in the second place, in an increase in the prices to the farmer, and, in the third place, to probably larger aggregate profits to the retailers, although perhaps smaller unit profits, and an increase in the average price.

The average cartage expenses involved from the terminal to the storeroom is about six cents a barrel. A large sugar barrel would probably cost $7\frac{1}{2}$ to 10 cents. That would be the rate for the zone below 14th Street. Above that would be a higher rate. That would be for barrels of spinach, kale, lettuce, etc. That is the rate agreed upon by the Market Truckmen's Association and various associations that are interested in arriving at a proper charge. That rate does not include any rebates; it is a flat rate. They give rebates in certain lines, I think, but I do not think the commission merchant does that. He has his own trucks or else employs them at a certain rate. I presume they arrive at this flat rate taking into consideration the congestion on the streets or docks whereby these trucks are delayed.

Of course, a man does not know when he takes a certain load from a certain pier whether he will be held up an hour or whether he can get those goods off in 10 minutes, so it is necessary to average it up. If the delays were eliminated it would seem to be likely that competition would reduce those trucking rates and the result would be that the truckmen would get just as good a compensation and at the same time could afford to haul for less. It is not unusual for a truck to wait from 8 P. M. to 5 A. M. in line to get its load during the summer months. Then they get some short hauls during the day that help up their averages.

The vast difference between wholesale and retail prices is partly accounted for by the fact that there is a great deal of waste in the goods before they are finally disposed of. The retail grocer, as a rule, will not come to the commission merchant for his goods. He goes to the jobber, where he can purchase all his line. The jobber knows what his trade will want and he procures from the market the various lines, he deals with the various receivers and he gets all the lines he needs to cover his particular trade. Then the retail grocer will go to him and purchase his single barrel of apples, his basket or barrel of lettuce or cauliflower, and such goods as he wants. Of course, there has to be a price for cartage. If goods are taken to Gansevoort, or Harlem, or Wallabout Market there has to be a certain price added as cartage by the jobber, and he naturally must get a certain profit—25 or 10 cents a package, as the case may be. Then the grocer buying that package and putting it out to the consumer in small lots may lose a half barrel of spinach on the barrel, which increases the cost, and he must make it up in the balance. There may be some goods that have to be thrown away, that are spoiled or left over. All these things go into the increased cost that the consumer has to pay. It must also be understood that the retailer must live. His living expenses must come out of his work and included in his expenses must be considered rent and very many other items. If he could purchase his goods by the market basket from the commission merchant at the rate goods are sold by the commission merchant, there would be a vast difference in the price, but that is simply impossible. You must take into consideration that this army of jobbers and retailers is absolutely necessary. Their cost must come in somewhere. Also all the various little items that add to the expense are practically inevitable.

Produce in the New York market usually passes through four hands—the producer, who ships to the commission merchant; then the jobber; and then the retail grocer. Sometimes there is a fifth, the person who collects from the farmers and ships to the commission merchant, but that is exceptional.

I am not prepared to say at this time just what remedy is the proper one for this difference in prices. I believe that our association is decidedly in favor of increased terminal facilities for the handling of goods. Of course, we know what the conditions are to-day. We cannot, any of us, foresee just what conditions will be in time to come under different terminal facilities or different arrangements, but certainly there should be some improvement. I do not believe the carrying lines to-day have sufficient capacity for taking care of and making prompt delivery of all the goods that they receive. It depends naturally on the amount consumed. I think a large terminal in every borough, accessible to railroads with facilities for unloading all receipts and expeditiously and economically delivering them to the receiver, would improve conditions, providing that the goods can be placed on the market without any delay and practically all at the same time, so that there could be no discrimination. That would benefit matters. We do need more and better terminal facilities, there is no question about that.

We sell goods on the pier. Whatever is unsold at the end of the market hours may be left on the pier or removed to our store. We are supposed to remove the goods from the pier within 48 hours. Naturally every receiver tries to dispose of all

his goods as fast as he possibly can. We do not pay any rent for space occupied on the pier. We try to have a minimum of five packages sold to any one purchaser. In some cases there are single packages sold. It depends on the kind of goods. Take New Orleans parsley, for instance. A man would not buy more than one or two barrels of that. It is a commodity that is used seldom and a buyer would not take more than one or two barrels where he cannot use five. You have to sell a commodity of that sort in one or two barrel lots. But generally we try to confine ourselves to five or more packages. There are exceptions to every rule. In many instances two or three small retailers club together and buy larger quantities than they can individually use and then divide them up.

Of course we use our own judgment in the matter of taking goods to our store from the docks if we wish to protect the goods and they are not going to get proper protection on the docks. Some of the transportation companies have frost-proof rooms to put lettuce and beans and other goods in to protect them from the weather.

Under the present terminal facilities it would be practically impossible for the retailers to buy in any number from the receivers. They could not buy from them if they wanted to, because there is no room to go to the docks and get the goods.

It is difficult to get at an accurate estimate of the difference between the price charged by the receiver and that at which the jobber disposes of his goods. The jobber may pay, we will say, \$2 for his apples. They cost him 25 cents for cartage. He may figure 25 cents, but not over 50 cents, profit a package. He pays 25 cents cartage, and, if he had to take them a considerable distance, he might have to pay more. If he had to take them to Harlem he would have to pay considerable cartage and, of course, he would add to that his profits. He has to figure the cost of cartage and the expense of his men in the purchasing of the goods and also take into consideration probable losses. I have known them to obtain no more than 25 cents above the price. That 25 cents includes the cartage also, so that he really gets an average of 19 cents.

WILLIAM H. BEHRENBURG,

Produce Commission Merchant

We handle all kinds of farm produce; the firm has been in the business about 45 years. Our specialties are apples, potatoes, onions, cabbage, and southern produce of all kinds. These commodities are shipped to us directly by the producers in most instances, especially from the south. Sometimes there are intermediate buyers between us and the producers.

We have nothing like store door delivery in New York. The railroads deliver the goods at the piers and we take possession of them there. The conditions at these terminal delivery points are very much congested. The facilities are not adequate for the needs of the business.

The terminal points at which we get our produce are: New York Central Pier 17, North River; Eastern Steamship Corporation at Pier 18; Erie Railroad Pier No. 20; Old Dominion Steamship Company Piers 25 and 26; Pennsylvania Railroad Piers 27, 28, and 29; Clyde Line Pier 26; Savannah Line Pier 35; and, of course, at all times the foreign steamship company piers that bring in imported potatoes; also at the Baltimore & Ohio Pier 22. In some seasons of the year we get stuff from Communipaw and Hoboken. We have to go over there with our trucks and truck it back. We also truck from the Pennsylvania Railroad Jersey City yards. The receiving points range from the Lehigh Valley Pier No 2, down near the Battery, up to the Clyde Line Pier 36 at Houston Street, and then the foreign business, lemons, etc., comes in from the Chelsea Piers up to Pier 44 at 44th Street. On the west side our salesmen will sell right at the piers.

On the goods we receive our cartage expense would average, I should think, about \$300 a week the year round. That does not cover the cartage that is spent on goods we sell, because the buyer usually pays his own cartage. Our cartage bill must total something like \$15,000 a year.

The reason for the difference between the wholesale and retail prices for the products here is that the methods are antique. There is too much wasted energy in bringing the goods from the receiving station in New York to the consumer. There are a great many delays in handling the goods. Naturally that adds to the price. There is also considerable injury to the quality of the goods by bad handling. Often buyers buy one package of stuff and they hold it at a price until the goods are sold. By reason of the heavy expense they are under they try to get a profit out of it regardless of market conditions. To-day, as low as onions are, for example—they are so low we cannot sell them at all—I will venture to say that the people supplying the consumers are asking as much as when onions sold for \$4 a package.

There must be a distributing point or a receiving point to distribute these goods from. I would strongly advise a union terminal and work out from that terminal to connect with the consumer—that is, get from that terminal to the supply station to reach the consumer. I think that one terminal in Manhattan would be better than a terminal in each borough. One terminal in Manhattan would lessen the cost of handling the goods. The more receiving points you have the more men are necessary. You have to have the same amount of help at each that you would have at the one union terminal. I think there would be room in the streets of lower Manhattan for the trucks that would have to come to that one point to get the goods.

The Pennsylvania Railroad during the heavy receiving season receives as many as 420 cars in a day. Their capacity is only about 310 cars. Consequently the other 110 cars have to lie until the following morning before they can be delivered. If there were a union terminal sufficiently large to unload all the perishable products so that when the markets opened up in the morning each buyer and seller knew just how many cars were to be unloaded there and the market was established at that time, there would be an average fair price realized for the goods. I think that the consumer would get his goods cheaper through the union terminal than he would if the market were divided up into four or five terminals. Where the consumer should buy is at the small individual markets whose owners should come down to the union terminal to buy.

Municipal retail markets throughout the city, I do not think, have been a success. I think that the small individual markets in every locality bring purchasers and consumers together and avoid the expense of a system of public markets. I think that the small retail markets buying directly from a union terminal would be a cheaper form of distribution. An equitable distribution could be worked out from the central market to a series of smaller jobbing markets, so that no one market in any one locality would receive more than a fair supply. I am in favor of private management of the small markets. It has been a success where it has been tried, and it is seldom that one hears any praise of the municipal markets.

My idea is that the city should provide terminal facilities and then rent out the spaces to private individuals and those private individuals should run the market. I am opposed to have the city go into the buying and selling business. I do not believe in having any municipal facilities further than the receiving station.

My idea is to get the thing to a central point. In the first place, that establishes a market quickly. You do not then have five different lines of prices that are established at five different markets. It is all established at one point. As far as cartage is concerned and hauling from this union terminal that is not a very great item. If we are carting to Harlem the cartage would probably be 10 or 12 cents a package. From any one of those terminals proposed for the different boroughs, no matter how

short the haul, it would be a matter of no less than six cents a package from any one terminal to the nearest point. Taking it as a whole, the cartage rate does not amount to a great deal.

It is not a question of what you want done but a question of conditions that exist and will persist in existing. For instance, the Pennsylvania Railroad, which is receiving more stuff than it can handle at its piers 27, 28, and 29. They receive there all their goods from the south. They have also a pier at Wallabout Market in Brooklyn where they will take the goods at the same rate. Yet, notwithstanding that, the Wallabout receivers do not want goods shipped over there, but want them sent to Piers 27, 28, and 29, for the simple reason that they want those goods at one place where they can come because the market is established there. It is simply a question of the establishment of a central market. The Pennsylvania Railroad spent \$250,000 in providing a market on the Jersey side and told the New York trade that they would in future deliver their goods to Jersey City; that they would not deliver them at Pier 29 in New York. The trade said that they would not go to Jersey to handle them and the Pennsylvania tried it out for part of a season and then abandoned that \$250,000 proposition and were glad to come back again to Pier 29.

The point I want to bring out is this: by reason of the highly perishable nature of the stuff we handle it is necessary for it to come to a central given point where the market is established. I do not know of any human foresight or power that can establish a market. It is just exactly the same as establishing a city. It is a matter of growth and of a great number of circumstances that no man can foresee. And, even though you build five different markets in the five boroughs, I will venture to say that three out of those five will not be used the way you expect them to be used, and that the trade will go to this central market which will be established of its own accord where the goods are received, and they must all, and will all, go to that point; and you will find that will be inadequate just the same as it is now, by reason of your dividing it up into five parts. And the sentiment of the trade will be to go to that point and they will do their buying there, and no power can prevent it, and three out of five terminals will hardly be used at all. The only necessary thing is to establish that central terminal in such a way that there will be no delay in getting the goods into the hands of the receivers and from the receivers into the hands of the consumers. That is the whole problem.

For instance, take the berry market that is down here at Pier 29. We receive anywhere from 10 to 50 cars of berries of a morning in the season and the buyers, all of them, come to that one point, and if there are only ten cars the price of berries probably will be 20 cents a quart. But, if we receive 30 cars, the price will drop to 5 cents a quart; and, if the next morning, there are 50 cars, the price will go down to 3 cents a quart. Now, if you have your five locations, men will be afraid to get the cars in there because the central point will get most of the goods and establish the market.

If you have a central market you will have but one price. If The Bronx people want to come there they will get the same prices as anyone else, and if the facilities are sufficient the deliveries will be practically all at the same time. If all the goods could be unloaded when the time comes for the opening of the market, the difficulty would disappear. Then everybody has the same chance and the market establishes itself right then and there. Refrigeration will obviate the depreciation of the long drives to deliver the goods.

The salesmen go up to the dock every morning and they know how many carloads of perishable goods were on the market the day before. They know how the market cleaned up. If the market cleaned up quickly and the receipts are not too heavy the following morning, the buyer knows there is a chance that he can raise the market price a quarter, let us say. On the other hand, if the market cleaned up

draggy the day before and some of the goods were carried over and the receipts are very heavy, he knows that he must cut the price to move his commodity. So the salesmen go right on the dock and, without talking with any other salesmen, you can venture when the day's work is wound up that there is not very much difference between the selling price among the whole of them on the whole day's market. It comes natural to them. If you are bringing out the idea that there is a price fixed between them before they start in, there is no such thing in our business. It is a matter of getting all you can for the men that ship to you.

I am in favor of a central market. We are bringing goods in here all the way from 3,000 to 10,000 miles away. The idea is to bring it to the one point in New York City, and, after having brought it there, to establish a market price on it, and distribute from that particular center to as many markets—whether individual or municipal, I don't care—as you wish. In that way you are going to deliver to your consumer cheaper than you can by having the jobbers' force increased and his expenses increased five times greater than they are to-day. With the market divided we would have to have five times as much help as we have to-day. The point I make is, if you have those five centers, you will find that most of the trade will go to one distributing point where the market is already established.

MR. HARRY DOWIE,

Produce Commission Merchant

Our firm sells butter, eggs, and poultry, and has been in the business 43 years. The value of poultry, butter, and eggs received in New York for annual consumption runs into the millions. These commodities are unloaded in New York at St. John's Park by the New York Central, Pennsylvania Dock, Erie, Delaware & Lackawanna, Lehigh Valley terminals, and by the various boats—Sound boats and Albany boats. The live chicken market is at West Washington Market.

New York is a very large distributing place. A great deal of these goods are shipped direct from the dock to wherever they may be going—to many places in the east or abroad, to Panama, Porto Rico, Bermuda, and to many southern points. The distributing is done by the receivers generally. There are very few commission men that are not also wholesalers and jobbers. They trade in three capacities.

The general expense of a commission man on an average commission man's business largely depends on the volume of business that he transacts. The larger the volume of business the less his proportionate expense. The general expenses of a commission man are risks of collecting his debts, in the first place, and his losses on advancements made, and that will run from two to three per cent. The costs of handling are, in the first place, rent, in the next, help; in the next, if you do a business of \$2,000,000 a year, you have to have a capital of \$300,000 to \$400,000. Then there is the interest on the money. There is the natural shrinkage which you can't save. This is caused by various reasons. You may in good faith have sold goods and they may not have proved exactly as you expected they would be, and you have to make a calculation on that. No man can do any amount of business but what there is a shrinkage and a loss in his collections. Commission men may advance money on consignments and many times they do not collect the shortage. We are not only receivers, but bankers as well. We advance on the bills of lading, and we are bankers for the men we sell to.

I think the present handling facilities in New York are sufficient if the men engaged in business will do business properly. Some have too much business appetite—they grasp more than they can consume. Sometimes goods are held on the piers because they arrive before the bill of lading comes, and a man cannot get his

goods until he has his bill of lading. Sometimes men have an idea that the market is going to be better to-morrow, and they will let the goods lie on the piers. Sometimes the men have not room enough to do the business that they ought to do, and the goods lie. Sometimes the goods are not up to the mark and there is a dispute between the receiver and the shipper and the goods lie until that dispute is settled. Sometimes the dispute is not settled for so long a time that the goods are put in storage by the railroad company. All that costs money. The commission man who pays the draft is the one that suffers; the shipper, as a rule, gets all the goods are worth before he ships them.

There are very few delays owing to congested traffic since we have had the new police regulations. We used to have many hours' delay, but not lately. There is very little blocking on the piers. I believe we have the largest business in our line in the City of New York and we have no delays whatever, and, consequently, no damage to goods on this account.

Our rush season is in the holiday times—Thanksgiving, Christmas, and New Year's. That is the poultry season rush. At that time the railroad companies, instead of opening up at seven o'clock for us, open up at one or two o'clock at night and that gives us extra time, and at that time the streets are not congested in any way. There are times when the Hudson River Road instead of running the cars into St. John's Park will run them on the street and let you unload on the street until 2 o'clock. There is no congestion there. In the vegetable business I have seen a good deal of congestion along West Street in the early hours of the morning.

The amount of receipts that go into the warehouses in the City of New York of food products outside of eggs is very nominal indeed. The other food products that would go into the freezers in the City of New York in any quantities would be poultry. Ninety-seven per cent. of the poultry in the United States is frozen outside of the City of New York. A large part of the eggs that New York takes are stored in Jersey City. This is for two reasons: in the first place, Jersey City freezers are all on railroad terminals. The eggs that are destined for New York City can be shipped right straight to those terminals. They are unloaded very easily without any breakage. They are stored at a much less expense than they can be stored in the City of New York because the ground that these buildings cover is not so expensive. The money invested in the buildings is not near as much as in New York. Insurance rates are much cheaper. The water that they have is everlasting; the water here is not. The refrigerators here have to continually bore deeper and deeper to get water and that is one of the most essential things. They use artesian wells here; there they draw it all from the river. A very large part of the produce taken into cold storage warehouses in New Jersey comes into New York.

There are several purposes of refrigerating produce, but it all sums up in this—it is an absolute necessity to provide food at a reasonable price for the people to exist. It was not necessary 45 years ago; 45 years ago in Washington Market the matter of dressed poultry, for instance, would be cared for by the old-fashioned methods. In that time dressed poultry was supplied to New York by the women coming from Staten Island and New Jersey and they would have their dressed poultry in baskets distributed on the sidewalks. To-day we get hundreds and hundreds of carloads of dressed poultry from Texas, the Indian Territory, Kansas, Missouri, the Dakotas. We even get poultry from China and from Russia. Those supplies are absolutely necessary to us. What would we, as a people, do without refrigeration if we could not get those supplies?

The cold storage charges vary a trifle. The man who can store several million pounds, or so many thousand cases of eggs, may get a special rate which is a trifle lower than the average rate. But the highest rate charged in the cold storage houses is less than you or I can hold those eggs in our own warehouse for. Where you

store solid carloads you get a little less rate of storage. It is less work and less trouble to handle 400 packages straight from one man than it would be to handle 50 packages from 50 men.

Refrigeration adds to the cost of produce from one-sixth to one-eighth of one per cent. per month. That would be one per cent. for six months. That is the average charge. Eggs are carried by the season—that is, from April to the 1st of January. They are carried for 40 cents a case, 30 dozen eggs to the case. That is a little over a cent a dozen.

The great part of the produce that comes to New York is produced outside of the State of New York. What the State of New York produces would hardly feed the Astor House one day. The goods are shipped in by the "shippers"—men who are located at points where several railroads converge, if possible. They put up their plants there. Nowadays those are put up in accordance with the very latest sanitary regulations. They have their autos, trucks or wagons, and they have their men and their routes, and the men go around to the farmers—sometimes around to the merchants, who, in turn, deal directly with the farmers—and they gather the goods and bring them to the central point, where the plant is located.

If it is live poultry the poultry is dressed at that point. After it is dressed it is properly cooled and properly packed. If it is eggs the eggs are candled and the "cracks" and the "dirties" and the "smalls" are thrown out and then they are placed in cases. If it is warm weather the eggs are placed in a cooler. When they have the car ready, which is from one to three days, it is brought up to the house and the car is thoroughly iced and salted so it is positively cool and the poultry and the eggs are placed in it. When the car is loaded this man gets his bill of lading—so many cases of eggs, so many pounds of poultry, so many pounds of butter—and he takes his bill of lading to the bank and he gets his money on his draft on his consignee, and we are the consignee. We pay the draft from three to five days before we see the goods. Our percentage of losses, however, is very small. We advise the shippers as to how much they can draw on the bills of lading, and the longer we are in business the more conservative we become. The particular percentage of advances varies, but we generally anticipate, providing we have to pay the freight, about 70 per cent. There are some shippers in the country on whom we do not place any limit because we have confidence in them. We meet their consignments to the full amount. There is a large business done in the City of New York by men here who own, or own part of these large packing houses in the West, so they are the men that produce the goods themselves very largely. There are a great many concerns here in New York who have no charge for cartage because their buildings are on the railroads. We have to meet the prices set by these competitors. Unless we did that, we could not continue in business. Our expenses to-day, compared with 30 years ago, are over 100 per cent. more, and our profits are less. We have to make up our profits by the volume of business we do. The unit of profit is very small.

Our rate of commission is 5 per cent., but we do not earn that much. We have no arrangement with any shipper to sell any goods less than 5 per cent., yet there are very many times when we do not make 5 per cent. The market may be good to-day and low to-morrow. If we remit to the shipper on the price prevailing to-day, the rate might be 6 per cent. on the first day, but on the second day it might be 4 or less, so we would perhaps not get on an average 4 per cent. for our commission. I think it is true that a careful business man's losses would not be considered heavy at $\frac{1}{2}$ of 1 per cent. a year. I think that would be a very careful business.

I had the profit of the intermediate shipper figured out by one of the shrewdest business men in the West, who owns his own plants and has been in business thirty years. I had him figure up his profits for five years and I had the commission man

in New York figure up his profits for five years, and the entire net profits of both combined were not 5 per cent.

I do not believe that lack of confidence between the shipper and the receiver has a tendency to increase the cost of marketing methods. I think the main reason for this cost is graft—graft by the chefs who want 5 to 10 per cent.; graft by the agent who has charge of the house where the lady of the household never sees the kitchen and depends upon the dealer or the servants to buy the goods, and the servant gets from 5 to 10 per cent., and because she does get a percentage or because the other man gets a percentage they dump the goods into the ash barrel and get more. I am speaking of what I know is true.

The people themselves cause a great deal of the high prices. I remember when a man might have a little butcher shop that cost maybe \$400 or \$500 to fix up, and when he might have an old horse and cart and people were perfectly satisfied to have that come in front of their houses as long as the meat was all right. Now, you have to have thousands of dollars invested in a beautiful butcher shop, and they cannot drive an old wagon in front of people's houses. Then, again, the methods of shopping have changed. A woman will telephone to her butcher for steak and then a little while after will find that she has forgotten the onions, and she will telephone again. That all costs money. I know it to be a fact that it costs some of these butchers 30 per cent. to deliver their goods when it should not cost 15, and that is because of the method of purchasing adopted by the women themselves. I think it would be an advantage to the trade if they allowed an extra percentage to the women who carried home their own purchases if you could get enough sensible women to accept it. But they are too proud to carry their own purchases home, and it is just the same with the men.

HENRY DUNKAK,

Produce Commission Merchant

We deal in butter and eggs and have been in the business thirty years. We do a business of about \$3,000,000 per annum. We secure eggs from the Western produce sections, bring them in and sell them, sending market agents out two or three times a year to make contracts. We buy from the producers, not from retail stores in the country villages, and also from collectors. We pay for them on sight drafts, bills of lading attached, and the goods are delivered to New York City. The usual method of receiving is that the goods are floated over and trucked out by hand trucks and put on the dock or pier. Our trucks go in and load up and haul them up to the store, where we have refrigeration, into which they are put as quickly as possible. There are undoubtedly many delays in carting shipments, due to the heavy receipts. At all piers the outgoing and incoming freight is handled at the same place and on the same days. We try to get the shipments off the piers as quickly as possible. Butter will stay on the piers from five to eight hours; eggs, from one to two or three days. They are not refrigerated during that time, but the piers are covered. The goods, while in transit, are refrigerated in the cars. This method of handling is, of course, detrimental.

Our store is within one-half to two-thirds of a mile of all the piers, and all our trucks formerly, twelve years ago, would make eight or nine trips a day. They can now make but four and sometimes five, when the going is good, owing entirely to congested conditions at the piers. The double trucks cost us, on an average, about \$10 a day.

The effect of these delays on the butter and eggs is that they are detrimental to the quality and consequently detrimental to the value, as the bulk of the product arrives during hot weather, during which time they will become affected quickly when

left on the dock. When the streets are congested the delay there is also detrimental. Butter, on a truck in a temperature of 90 degrees in the sun, is more or less affected in quality before it can be placed in a properly protected place. I think the loss of butter and eggs in the City of New York from these causes is at least 1 per cent. That is very conservative. I think it is more than that. The butter trade of New York will be at least \$60,000,000 a year. The egg trade would be as much again.

The method of handling eggs, an especially fragile article, is also largely a cause of loss. Every time they are handled some eggs are broken, and whenever you get a broken egg in a case it also deteriorates all the eggs in the case packed with it. I think it would be a great advantage to the trade if there were terminal facilities so the refrigerated cars could go right into chilled rooms and be unloaded there. I think that is the proper way to do it. There is no sense in handling eggs coming into New York and going out of New York eight times. They are taken out of the cars and dumped on the pier; they are taken from the pier to the truck and from the truck into the store. There they are sold and put back again on the trucks and there taken down and unloaded on the pier, and from the pier they are loaded back into the cars. Then, of course, they have to be rehandled at the other end.

I ascribe the great loss in value and in quantity to lack of proper terminal facilities. There certainly should be some method devised whereby it could be obviated. It would all result to the advantage of the consumer in the long run. I think we could overcome the loss if we had proper terminal facilities whereby the cars could come right into the market and be unloaded directly. Wherever there is a terminal market you will find the merchants gather about it.

The volume of butter riding into this market will average from 50,000 to 60,000 tubs a week. Of course, at the time of maximum production, which is during the summer months, they run from 70,000 to 80,000 tubs a week, while in the winter months it will run down to 35,000 tubs a week. Eggs will average through the year from 100 to 150 thousand cases per week. During the time of maximum production, which is in April and May, the receipts run up to about 200,000 cases a week.

We get our butter right from the creameries, the producers; we get eggs from the collectors. Most of the butter is produced by coöperative creameries. They are usually combinations of a number of farmers and are coöperative companies. They elect a secretary and a treasurer and we make a contract with him. In cases where there is an egg territory there are men in that business buying the eggs from the individual farmers, and we buy from the collectors.

GEORGE DRESSLER,

Wholesale Commission Dealer, Wallabout Market

I have been in the business for thirty-four years and do a business of about \$500,000. I am familiar with business conditions in and around Wallabout Market. Five or six years ago, when I was president of the Wallabout Merchants' Association, we made considerable effort to get the city to establish a union terminal on a plot of ground 8½ acres in extent. We went to see all the different railroads to find out whether they would be satisfied to coöperate with one another to bring cars in there and bring stuff to the market. Almost every representative of railroads we saw was anxious to coöperate in a proposition of that kind. We took the matter to the Comptroller, who has jurisdiction over all markets, and he was satisfied if a proposition of that kind could be arranged. We laid the matter before the Corporation Counsel, and he, in his wisdom, advised the Comptroller that a railroad terminal was not "for market purposes." Under the conditions under which the land was conveyed to the city by the United States Government in 1895, this plot of ground

was to be used only for market purposes or business pertaining thereto. As the Corporation Counsel ruled that a railroad terminal would not be for market purposes, we could not have the terminal.

When the City bought this property from the United States Government, they inserted a clause in the deed that the City should dredge a canal to within 500 feet of Flushing Avenue and put in piers and slips and create a basin there. That has been done. The basin is about 400 feet wide and there are about five piers in the basin, leaving 150 feet between the head of the pier and the Clinton Avenue extension. This fairway of 150 feet is not sufficient for the traffic. I have had a great many communications about it, of which the following is a good example, to show the conditions that prevail:

Mr. George Dressler, President,
Wallabout Market Merchants' Association,
Brooklyn, N. Y.

DEAR SIR: On December 11, 1912, the Schooner ——— had to tie up outside at head of Clinton Avenue Pier, account of the whole Clinton Avenue extension being covered with sand, gravel, broken stone, and an excavation dump and runway, also pile of wood, all of which was there without any permission from the Highway Department, and if said permit was granted by anyone connected with the Dock Department, they have certainly exceeded their authority.

Through the efforts of the Dock Master in my behalf, the pile of wood was removed so as to allow me to unload the cargo of 3,657 sacks of potatoes.

On December 19, 1912, the Schooner ———, with a cargo of 4,416 sacks and barrels of potatoes, remained a whole day outside of other boats at Clinton Avenue Pier for the same reason, at an expense of \$20 per day.

Again, on December 26, 1912, the Schooner ———, with 2,287 sacks of potatoes on board, had to remain without a berth at the same pier for two days, at an expense of \$10 a day.

Will be pleased to have you take this matter up and see if these annoyances cannot be eliminated.

Those piers were built by the city for market purposes and for no other purposes. I made an application a considerable time ago to the Dock Master to get the privilege to have fruit and vegetables brought at certain times of the year. The commissioner turned it down and would not grant the privilege, as under the restrictions placed on it by the United States Government, this pier cannot be leased and is for the use of transients.

The market is peculiarly controlled. The Dock Department has control of the water front, the Comptroller has control of the market proper, and the Bureau of Public Buildings and Offices, the Borough President, has charge of the rest of the market. After considerable negotiations I got a lease to put up a row of buildings on the water front to be used for general purposes. Anybody in the market can come in there. I have the right to collect wharfage on boats coming in there, but for the three years that I have had the lease, I have not collected one penny of wharfage. I believe that the upbuilding of the market requires that the place should be there and I work accordingly.

I believe Wallabout is the largest market in the United States. It covers about 36 acres. Seven-eighths of the market is built on by two-story brick buildings. We receive goods in the market on all the trunk lines—the New York Central, the West Shore, the Lehigh Valley, the Erie, the Baltimore and Ohio, the D. L. & W., and the Pennsylvania. They have car float connections. Besides that we have water front connections with a basin alongside the car float terminal. There is a square in

the middle of the market for the market gardeners. They sell to the wholesaler by private sale. There is no auction selling in the market. Most of the stuff coming in on the car float connections is consigned to individual concerns doing business in the market. They sell to wholesalers, jobbers, and retailers.

I would recommend an enlargement of the market facilities by getting a lease of 200 or 250 feet along the Clinton Avenue extension. That would enable us to bring in car floats head on. A car float is 24 feet wide. We can bring in 12 cars on a float. The basin is about 400 feet long, and if we had space along the Clinton Avenue extension we could bring in ten times as many cars as can come now. We can only get in 12 cars a day now. They are kept on the float and handled on the float. There is no doubt that it would be an improvement to the market if we could run them off the floats directly into the market, but the number that we could handle would be limited as the switching space is not large. You have to have room for dead cars after they are unloaded. There is a space between the buildings and the water front of about 10 feet. Goods could be unloaded from the cars on hand-trucks and taken to either side of the market. In that way we could probably handle from 120 to 130 carloads a day there. As it is now they can only run in on one float sidewise.

Such an arrangement would serve the district west of Washington Avenue and be a great accommodation to the district east. The larger part of the trucking is now east of Washington Avenue. It would be difficult to bring cars across Washington Avenue now, because the streets are not wide enough. We would have to tear down some buildings. Some of the streets are only 35 feet wide, so that a horse and truck backed in on each side of the street causes congestion of traffic. To bring cars to the center of the square it would be necessary to destroy a few of the buildings. The blocks of buildings vary from 200 to 250 feet in length and from 90 to 100 feet in depth. No doubt it would be of great benefit to the market if these cars were run off the floats across Fleeman Avenue, across Washington Avenue, and through the row of buildings between Washington Avenue and West Avenue to the center of the market. I do not think it would be a very costly proceeding. The buildings are two-story brick, and in themselves do not cost as much as the improvements inside. I have no doubt that it would pay the whole market to have these few destroyed for this purpose.

The restrictions imposed by the United States Government prohibit anything being placed on the Clinton Avenue extension. The purpose was to keep the space vacant so that the Federal authorities could use it at any time. The City is bound to keep the space open, but, instead of its being kept open, there is a dump there and a runway, and at times seven-eighths of the Clinton Avenue extension is littered with stone, gravel, and sand.

The streets of the market are paved with cobblestones. The pavement is old and has been there for years. The buildings are built by individuals who lease the ground. The only public building is for the janitor, and this also has a meeting room for the Market Association. There is no place for auction sales or anything of the sort.

RETAILING

JOHN STEENECK,

Retail Grocer, Manhattan

I have been in the grocery business twenty-three years. In that time I have dealt in perishable products as well as dry groceries. Up to two years ago 60 per cent. of my sales were in perishable goods; now, the percentage is about 40. My business last year was over \$35,000. The quantity of perishable goods that I handle has fallen off

because I am getting too old and it was too strenuous for me to handle it in the proper way. In order to carry it on successfully I would have to attend the receivers' sales and the farmers' market. The receivers are generally between Dey and Harrison Streets, between West and Greenwich Streets. I have to go to different receivers for different lines of goods, and to the farmers' market for still other lines. I have to go to all these different places at a most inconvenient time—from four o'clock in the morning to half-past seven, and have to visit in the neighborhood of about six or seven different receivers, and sometimes as many as twenty in order to get the goods I need. The farmers' market, Gansevoort Market, is about a mile and a half to two miles from where the receivers are located.

I could go to a central buyer and get the various things I require, but the profits would be curtailed—I could not buy at the same price. I would have to buy from persons who had already collected their goods from the receivers and from the farmers, and who, therefore, would add a profit that would have to be charged to me. I would have to pay them a certain amount for buying for me.

I think the prices of perishable goods have not increased. The only difference to-day is that probably people at the present day are higher livers and demand a better class of goods than heretofore. What people used to be satisfied with twenty years ago they would throw aside now. What we formerly used to consider luxuries have now become necessities. I think during the past fifteen years that prices have risen to a certain extent because of the increased cost in labor. In former times the farmer used to hire these men for \$10 and \$15 a month, but now he pays them \$25 a month and board—that is, the truck gardeners. The price of the product had to rise because of the increased cost of the labor that goes into it.

If we could get goods at first hand at one place it would be much easier and much cheaper, and a great deal of time would be saved. Now, there is an immense amount of time lost which, of course, costs money. I could afford to stay in the business then because it would not be so strenuous. The prices would be about the same. If we could get the goods more easily it would have a tendency to keep the young men of the city in the grocery business instead, as at the present time, of their being forced to go into some other kind of work. They absolutely refuse to do that work now, because of the labor. I do not think it would induce the farmers to send more goods in, because they send all their goods in now. The grocery business in New York is conducted as well as it might be, except that they have not the proper market facilities to get the products in time without great effort.

They ought to have a larger farmers' market where the wagons would not be so congested, and they ought to have a large terminal where the commission merchants would be all in one place and the products would be sent, which would enable the retailer to get his products at first cost, that is, from the commission dealer himself. One such market would not do for the entire City; each borough should have one. It would most undoubtedly save hauling. It is my opinion that the retail grocery business would be benefited if we had these different terminal markets.

I am not in favor of municipal retail markets. It is impossible to get them to be run economically and as well as private markets are now run by individuals. I would rather have such markets than the peddlers on the streets, but I do not think the markets would last very long. I would not take a stall in a municipal retail market as a gift, because it would not be a success. I would not have any customers. Customers will not go out of their way to buy goods.

If I were to deal in perishable goods now, I would have to go to work at four o'clock in the morning and keep my store open until eight or nine at night. If I could get the goods directly at one market I would not need to do a day's labor before other people get up in the morning. It would be an inducement for me to stay in the retail business for the sale of perishable goods.

If the wholesale terminal markets were established under favorable conditions, I and other dealers could sell more of this line of goods than we do now. That would increase the market for the farmers, and that in turn would induce the farmers to produce and send in more goods, which would have a tendency to lower prices. At the same time the farmer would get better returns.

I buy by the package—five, ten, or twenty-five at a time. All grocery men cannot do it: they are not strong enough. I, of course, bought at the dock. If facilities to buy directly at the dock in one, two, or three packages were provided, it would reduce the cost to grocers if they had the dock large enough. It should be near the farmers' market, too. The whole market ought to be at the same place. Of course, during certain times of the year, it does not matter so much. Grocery men come down twice a week to the commission dealers in the winter time. Then we do not need a market every day. And, the other day, they go to the Harlem Market and buy of the farmers there. But in the summer time we cannot do that.

These goods come to the market in large lots and are bought up by the wholesalers and by them regraded. In order to have the goods properly graded to meet the requirements of trade, there has to be a middleman to take care of them, and it takes time and money. You never can get rid of the middleman.

I am positive that the perishable goods are sold on a more scientific basis to-day than ever sold heretofore. There is keener and closer competition by all men handling that business. There is no such thing as a high cost of living—it is the cost of high living. That is, people are living better and in better houses, and are being better clothed and better fed than ever before. With our railroad facilities and ability to get goods here from all over the world, we get them cheap in comparison. If we had better handling facilities we could distribute the goods more cheaply, and I am satisfied that you would have better men in the grocery business.

GEORGE STADTLANDER,

Retail Grocer, Manhattan.

I have two stores and have been in business about seventeen years. I have served as Chairman of the Retail Grocers' Association. I dealt in perishable goods, constituting about 35 per cent. of my trade, up until within the last three years, but gave it up because the work was too hard. The hours were long, as it was necessary to get up early in the morning and keep open late at night, and the work of handling green goods is difficult. One has to get up at three or four o'clock in the morning, and then at seven or eight o'clock at night, when every other man is through for the day the stuff has to be packed away nicely so as to preserve it for the next day.

I principally dealt in Gansevoort Market, although I tried for years to buy directly from the docks. I found that, however, almost impossible. Sometimes I would go down at one or two o'clock in the morning and get back at my store at six, with only part of my goods bought right. I finally decided that life was too short and there was not enough in it. I still sell fresh fruit, however. To get my supply of perishable goods I stopped at from ten to twelve places in Gansevoort Market, from commission merchants to farmers and speculators, and then once a week I would go to the commission merchants downtown and buy merchandise, such goods as I could buy and keep three days or a week and that would not spoil.

I do not think that the price of perishable goods has increased much in New York in the last ten or fifteen years. There has been an increase in real prime stuff. At the present time, consumers demand a grade of goods that is very far superior to the ordinary goods that formerly were considered good enough. The consumer to-day buys ten cents' worth of apples and wants every apple perfect. There are apples

rotting on the ground in the country, but we could not get twenty-five cents a barrel for them shipped in to us. In the country they will go into the garden, pick a basket of apples, peel them, cut out the worm spots and specks, and then turn them into good apple sauce, but you cannot get them to do that here in New York.

We certainly have difficulty in getting prime goods from the farmers. I was hardly ever able to get them from the farmers because, in spite of my being early in the morning, there were in-between men there before me, commission merchants, and dealers. They were always there before me and had the selection of the farmers' goods picked. I could go to a farmer and buy beans at \$1 a bag, but the dealers would want \$1.50, and they had the choice thing and if I wanted the choice I had to pay the price.

Apples are graded by the commission merchants generally. I believe they send their own men to the country, who pack them there. To tell the truth, I would not buy apples from a commission merchant if I were not told that his own men packed them, because I would not trust the farmers. When they are packing their apples in the country they will put a stove pipe in the middle of the barrel. They will fill the sides with good stuff, but in the middle, down the stove pipe, they will dump all their bad stuff. Then they pull out the stove pipe and there you are. As a consequence, the up-to-date commission merchant sends his own men to the country now, who do the packing of their own products. They then mark very plainly the packages, X, XX, XXX, or XXXX, as the case may be, indicating the quality of the product. I think it would be an excellent plan for the farmers to have an association whereby they could guarantee whatever produce they send to market. I think there would be a feeling of better security and the result would be better all round. Of course, there are individual farmers whose goods are well known and from whom purchases are made without any question. There are many such. Confidence in the seller induces the buyer to buy without any question. If goods were guaranteed by some coöperative association of farmers, that would help; and if we had two or three grades, and goods were graded by competent and honest men, we would know just what to do.

To improve market conditions here, I think Manhattan ought to have one market at least twice the size of the present Gansevoort Market, with wide streets where the farmers could drive in and stand comfortably, and where the buyers, such as grocers and peddlers, could drive in conveniently and go up to their wagons and buy their goods without blocking traffic and being delayed. And I believe The Bronx ought to have one or two such and I think we ought to have another market at 185th Street along Washington Heights. I think these should be wholesale markets. I should not object to there being a retail department where the farmers could sell their stuff. If retailers could get their goods more cheaply they could sell more cheaply. The selling price is determined by the buying price. That works quickly and entirely automatically.

If the grocers could get their supplies more directly and at one place and more cheaply, I think they would sell more goods than they do now, and I believe they would take more interest in it. That would increase the demand and would induce the farmers to send more goods in. And if the farmer could come into closer contact with the buyer direct, I mean the retail grocer, he would be more pleased. I do not think any means can be devised whereby the middleman can be cut out. He provides supplies for the market from abroad when a shortage is threatened. That is one of the necessities of the business about which the public knows nothing. There is no question but that the people on the farms get careless in packing and shipping their goods. You must have some middleman who will take charge of that detail and watch the product and see that it is perfectly fresh and in proper condition. Without such a middleman the result is apt to be bad.

I do not think municipal retail markets located by the city in various sections are

advisable. They might be made a success, but I cannot see any reason why they should be made a success. There is no way of distributing food products better than what is done now. The retail grocer in the business now does not make a great fortune. Only 5 per cent. of the retail grocers survive the strain and stay in the business.

The systems of chain stores have a central or distributing station. They buy in large lots in the various markets and send the goods around to the smaller stations throughout the city. I am just opening up a chain of stores. Just as soon as a store does not make a profit I close it up. I do not own the stores, I rent them. I do not think that such a chain of stores could possibly be operated by the city successfully. Forty per cent. of the retail grocer's business is in butter, eggs, and sugar. Those commodities produce a profit of from 4 to 7 per cent. A retail grocer who delivers must make from 15 to 16 per cent. in order to continue doing business. It costs me, in my chain of stores, about 11 to 12 per cent. to do business. The result is I have made about 3 per cent. clear profit, and that is not any too much. The city could not do business as cheaply as that; it would cost them 35 per cent. We have to figure very closely to make anything.

If the retailer could get his goods directly from the wholesale terminal he could sell more economically than he does now, and more economically than either the municipal retail markets rented out to stall holders, or a municipal chain of markets, because there would be more competition among the individual merchants after the trade. I do not think it would be a good plan to have all the market places in New York concentrated in the hands of one association of producers and consumers, because it would cut out all competition. I think a railroad terminal is necessary as well as a farmers' market. Both should be in one spot.

Some of the consumers in New York are very unreasonable. They think, intelligent people, too—that because the sun shines one day out of two, or because it rains one day out of sixty sunny days, that salads ought to be cheaper. They do not realize that seasons vary and that some seasons are very poor for the production of different kinds of salads. They do not seem to realize that a long dry season will have a very bad effect upon the quality of the goods, but think that if it happens to rain one day that is sufficient to cure all the trouble that has been caused by the long dry season.

Then, again, many people have charge accounts in retail grocery stores. In the very early season, long before the local markets are producing anything, produce from the far Southern states is brought in and it naturally brings high prices. People order goods and never ask the price, and we would not tell them the price because, if we did, they would feel insulted. Then, about a month later, they get their itemized bills. By that time the produce is cheap. They look at the bill and they say, "That grocer is robbing us." Then they go to another store.

CHARLES HASLOP,

Retail Grocer, Manhattan

I have been in the retail grocery business about twenty-five years, and do a business of about \$25,000 a year. About 40 per cent. of my trade is in perishable goods. In the last ten years the price of perishable goods has risen and fallen. Of course, when goods are scarce in any line, the prices will naturally stiffen up. Speculators under such conditions can often get in and control the market, but when goods are plentiful they cannot do that—the matter is determined by supply and demand.

I do all my marketing from Gansevoort Market to West 14th Street. You cannot buy all in one place. I go around and see as many farmers as I can until satisfied that I have the right goods. Then I go into Washington Street from 12th to 14th

Streets and there are some direct receivers there. I buy oranges from a wholesaler; potatoes and turnips I buy from receivers; green vegetables I buy directly from the farmers. I suppose it would facilitate my work if all these people could be found in one market. If we had the railroads, such as the New York Central and the Lehigh Valley coming into one big central place, it would help. I get my turnips and potatoes at the New York Central yards and get them a little lower than downtown. But the people downtown who rehandle the stuff do not overcharge. They just charge a normal profit for handling. In the railroad yard you are never sure of getting the same grade of goods twice; you have to take a chance.

If a Farmers' Association were formed up-state to grade its goods and guarantee them, it would create confidence and would also eliminate a great deal of waste. The creation of confidence and the improvement in the condition of the product always tend to facilitate trade. If the farmer were satisfied that the full quantity of goods he raised could be sold at a fair price, he would raise as much as possible. That would bring more goods into the market and would have a tendency to reduce prices. It would also reduce the trouble and worry of the retail dealer in getting his goods.

Weather conditions and congestion on the docks often give receivers and wholesalers difficulty in getting their goods into the market. They send trucks down to the different piers for berries, for instance, and have to cart them from down below Harrison Street to Gansevoort Market. There occurs a delay of an hour or two hours. Each truck has to take its turn; they have to check the packages on the dock and, of course, there are a great many trucks. All that adds to the cost. If all the stuff could be run right into one market where all that delay might be obviated and that cost eliminated I think it would be much better.

I have considered municipal retail markets located around the city in various places and rented out to stall holders, and I do not think they are economical. I do not think that goods would be any cheaper in them than they are to-day. How can you expect to get anyone to work as the retailer works now, who has his entire fortune at stake? He works fourteen or fifteen hours a day, always striving to eliminate that extra cost, and he has to compete with all the other retailers. There is very close and keen competition, and he has to take many chances.

Much harm is done by the untruthful statements printed in the newspapers. I saw in the Times the other day that there could be gotten 75 quarts of apples out of one barrel. That is not true. I get about 35, if you figure dry measure. I live in a neighborhood populated by middle-class people; perhaps some stores do not have to give as good measure as I have to give. I use a 4-pound bag and fill it for a quart.

A barrel of potatoes is supposed to weigh 180 pounds. I give 4 pounds of potatoes to a quart; I fill a 4-pound bag—it may be one-quarter of a pound, more or less, than 4 pounds. Now, you divide 160 pounds by 4 and you have 40 quarts. I am figuring 20 pounds less out of that barrel of potatoes because of waste. You will always find that there is a lot of dirt and other cause of waste in a barrel.

WALTER J. BECK,

*Dealer in Meat and Poultry, Fruit, and Vegetables,
in Washington Market*

Our firm has been in business for thirty-five years, catering to private families uptown and the downtown restaurant trade. From April to September we handle from \$5,000 to \$7,000 worth of fruit. From September until March our sales of vegetables amount to \$6,000 to \$7,000 a month. The value of the poultry we sell is about one-third that of the vegetables. I deliver to my customers and make no extra charge.

Stuff shipped into New York comes no farther than the terminal unless sent by express. The conditions at our delivery points are very poor. The commission men pay the transportation charges on their commodities and are allotted space on the piers, for which they pay nothing additional. They have the use of it during certain hours for the transaction of their business. The foreman in charge of the pier designates the amount of space needed for a load of stuff. Some commission men take their goods right to their stores, but the majority of the stuff is sold on the dock. The retail grocer usually buys from a second commission man and takes away his own goods. There is practically no handling of the goods by the commission man except loading them onto the second man's truck. If more stuff comes in than the day's trade will take, some docks are large enough to carry it over, and on others it has to be sold off at low prices. The New York Central Dock at Barclay Street is large enough to carry it over; at Desbrosses Street the stuff has to be sold by 3 o'clock; spinach coming in in the winter at the Old Dominion Dock has to be sold by 8 or 9 o'clock in the morning because they need the room for other freight.

There is always a big demand in New York City for good stuff. The best stuff brings the highest price early in the morning. A large retail dealer usually maintains a buyer, who does nothing but buy. Some Italian dealers form small companies of five or six dealers, who employ one man to buy for them and distribute to them.

I have to visit seven or eight points of delivery to get supplies, but these are all in one district. The stuff comes from different points and at different hours. Very few stores need more than two buyers, and it is seldom they have two. Owing to congestion there is delay in getting the stuff off the docks. Some dealers' trucks get in line at 8 o'clock at night to take a delivery away at 1 in the morning; then, sometimes they have been known to wait from 1 until 5 in the morning before they could get down to the pier and back with a load. That, of course, is a trucking delay and does not keep the buyer.

The piers open at different hours: the Barclay Street Dock opens at 7 o'clock, the Old Dominion Line Pier at a quarter to 5, and the Pennsylvania at 5, so that there is time to get to all of them. When a buyer goes to the dock he views the stuff displayed and buys a certain number of packages, and the man gives him a slip calling for his purchase. This slip he gives to the driver. As far as he himself is concerned, he is through. He then goes and attends to the rest of his buying, which is done in the same way. The driver goes on the dock and loads the stuff there. They charge one cent to load the package on the wagon. That is the way the thing works out practically.

On a commodity like string beans the retail price is from 15 to 20 per cent. in advance of the wholesale price, or from 25 to 50 cents a package worth from \$2.75 to \$4.00, and containing from 20 to 25 pounds. I do not think the advance is more than that because competition is so keen to-day that it cannot be made more. If we can make 75 cents to a dollar for retailing out 20 pounds of beans, we think we are doing well. We generally figure 3 to 5 cents advance on a quart on an article of that kind.

From my observation I am of the opinion that the farmer was never better off than he is to-day, and the public are getting their stuff as cheap, I think, as they ever did.

WILLIAM LITCHENFELS,

Retail Grocer, The Bronx

I have been in the business thirteen years and am familiar with the condition of the grocery trade in The Bronx. Of the perishable goods, I handle chiefly potatoes, and now, during the fall and winter, oranges and lemons. The men who handle other perishable goods have to go to the Harlem Market. The potatoes come down

on the New York, New Haven and Hartford to the Harlem River Station. We buy them right out of the cars.

For other things we go to the Harlem Market, at 102nd Street and First Avenue, to which the produce is trucked up from downtown. It is an intermediate station. All of the grocers in The Bronx go to the Harlem Market; some of them even go down to Washington Market, a distance of about 10 or 12 miles. I do not think we get our perishable goods in The Bronx as cheaply as we ought to. The only way to change it, that I can see, is to open a market—open a big wholesale market and let everybody come in, so that the retailers can go there and get their stuff. That is the only way. Naturally a market where all railroads came in would be better than a market where only one railroad came in.

So far as I know, there are no farmers' trucks coming into The Bronx now, though there used to be in the Port Morris Market. All the supplies are brought in from the Harlem Market or the West Washington Market, with the exception of the small supplies brought in by railroads and sold out of the cars. The prices in The Bronx are naturally higher because you have to charge for cartage.

I do not know just why the Port Morris Market was discontinued. Probably not enough farmers came to it, and the variety of goods handled there did not satisfy the retail grocers and the Italians who handled the vegetables. The variety there was not sufficient, and so they were obliged to come downtown. That is the reason people go to the Harlem Market now instead of patronizing one or two merchants now in The Bronx who are trying to do business with the fruit and perishable goods men there. The larger the market the greater the variety. Another disadvantage of the Port Morris Market was that it took about as long to drive there as to drive to the Harlem Market, where there was much greater variety. Also, in such a place, you are always sure of a market value because people go to shop there. The greater the variety supplied the better the chance is to trade. A little market is always under a handicap.

During the summer months I send my driver down to the Old Dominion Line to buy new potatoes, down at Rector Street. He goes on the dock there and buys new potatoes by the barrel. That is a drive of about 20 miles. It takes about two hours to go down and longer to drive back with a load, and often he has to wait.

I have not considered seriously retail markets spread around through the city under the control of the city. So far as The Bronx is concerned, I think one large wholesale market would better conditions.

PETER A. PECKICH,

Retail Grocer, The Bronx

I handle dry groceries and potatoes. I carried green groceries about five years ago, but cannot do it now because I cannot go down to the market and get the goods. I would lose half a day buying the stuff and could not attend to my other business. I have to sublet my storefront to an Italian, and he sells that kind of goods. The man I have goes down during the summer to Washington Market from 169th Street. He makes a special trip for berries and things of that sort. He has a horse and starts in the evening about 10 o'clock and is back about 10 o'clock the next morning, spending the night down at the market.

There aren't any markets around The Bronx where one can get these things. I drove down to the Port Morris Market once, when I handled that stuff, but I found I was losing time going there because it was such a long way and was so hilly that I could not go there as quickly as I could to 101st Street, to the Harlem Market. Then, they had goods there only during the seasons when the Long Island

farmers grew them. The rest of the year they had nothing. That was one great trouble. I could not get all I wanted there and the driving was more out of the way than going to the Harlem Market.

The prices of green vegetables in The Bronx are very high. I think we ought to have a wholesale market up there where we can get them in quantities so it would reduce the prices. The bigger the market the greater the variety. If we had more railroads we would get the goods from all directions, at all times of the year. We would then have a bigger variety and a steadier trade.

TRUCKING

GEORGE STAMBERGER,

Truckman

*Chairman of the Executive Committee and Chairman of the Market
Truckman's Association*

I have been in the trucking business since 1888. I have eight trucks—two double and six single trucks, and truck vegetables and fruit, eggs, poultry, butter, and cheese. I operate on the West Side from Canal Street to the Lehigh Valley, and on the East Side from Pier 8 to Pier 50, trucking for George J. Ziegler and Company, dealing in produce and fruits, Beyer Brothers' Commission Company, dealing in butter, eggs, and poultry, and Gleason and Wendt.

I make my agreements directly with the people I do work for. The rate is by the package and depends upon the distance. The charges are different for different zones—such as Canal Street to 14th Street, 14th Street to Harlem Market, to Wallabout Market in Brooklyn, etc. The rate also varies according to the size of the package carried. Outside of the zones mentioned in the published rates of the Market Truckman's Association, any trucking is by private agreement.

My trucking is all done by horse truck, the crew of a double truck consisting of one driver and two horses. There is no helper on the truck, but on all the piers we have loaders. The boss carman pays the loaders on the piers. The loading rate is 75 cents per hundred for small packages and \$1 for barrels, whether it is spinach or cabbage or something else. Sometimes we have to pay a cent and a half on potatoes. The drivers do not load.

We truck from the piers to the stores, or to terminals for outgoing shipment, according to orders. The receiver usually hires us and pays the trucking fees and we run weekly accounts.

The rates are fixed so that we may have a general cartage. They are based upon the united experience of the truckmen and the trade they serve as to what would be a fair return for the trucking done under the present circumstances. Sometimes there is a good deal of delay at the terminals in getting perishable goods. In the summer time, when they have delivery at 1 A. M., we have to get the trucks there anywhere from 6 to 10 o'clock at night so that we can get our goods out early enough for the firms we do trucking for to make their express shipments.

I figure that I have to get \$7 on a single and \$10 a day on a double truck before I can commence to make a profit. Twelve hours constitutes a day's work and we charge 30 cents an hour for all time over that. The rates are based on the fact that we have to submit to delays. Because of the delay the truck is thrown out of work for part of the time and therefore we can carry a less number of parcels than we otherwise could, and must charge more on each parcel and that has a tendency to increase the cost of the goods. We have the delay all along the river. In the morning, on all the railroad piers, they do not handle their outbound freight until

the inbound is all unloaded and, in the meantime, the accumulation is so that when we send a truck down there at 10 or 11 in the morning we do not get it back until 2 or 3 in the afternoon. Goods are all piled up there so that you cannot unload. Of course, in the summer, when the sun gets on the goods, they are bound to be injured in some degree. So far as our line is concerned, rebating is stopped. The congestion of outgoing freight tends to drive the out-of-town trade to other cities. Years ago, I sent, in butter season, anywhere from 10 to 25 loads to the depot for one concern, and at the present time those people do not have enough for their own wagons.

If the facilities were better, so that we did not have these delays, we could charge a less rate and make just as much money as now. The less handling goods have the less will be their cost. If we could decrease the charges on goods, probably more would come in and they would therefore be cheaper. The truckmen would have more to handle, so they would suffer no harm; the farmer would not be harmed; nor would the consumer, because he would get his goods cheaper.

M. C. MICHAEL,

Truckman

Secretary of the Market Truckmen's Association

My business is to keep my employers out of difficulties in gathering freight at the piers and shipping it, and once in a while have a little excitement with the traffic regulations and the labor organizations. The schedule of trucking rates is made up in an equitable manner between the commission merchants and the carmen. They are based on the performance of the truck, cost of maintenance, etc. A double truck costs about \$450, and is supposed to last three years. The driver is paid \$3 a day for 12 hours a day from the time he leaves the stable, and 30 cents an hour for each hour overtime, six days in the week. The summer time is the busy season. The average wage of a man driving a team is about \$24 or \$26. A pair of horses costs from \$600 to \$750. A man should average from \$8 to \$10 a day for a double truck and \$7 for a single truck before he begins to make a profit.

The object of the formation of our Association was to cut out the rebates. We make that cartage rate as low as we possibly can with protection to ourselves. We think we have succeeded in cutting out rebates as far as the New York commission men are concerned. Some shipping houses with representatives here still collect what is in effect a rebate in the form of a "dock cartage," which they charge for the privilege of going on the dock and moving the stuff.

We find the railroad terminals so congested that oftentimes a man can only ride one load where he should ride three. In the forenoon the delays are one to two hours, as a rule, which, as the truck costs about \$9 a day, may be figured as a loss of 75 cents an hour. Sometimes there is a delay of half a day. We have to charge an average rate which will cover all these things. It is a great disadvantage to the trade to have these delays.

REFRIGERATION

FRANK A. HORNE,

President, Merchants' Refrigerating Company

The Merchants' Refrigerating Company operates cold storage warehouses for the storage of food products and other goods under refrigeration. Our houses in New York City are located at Nos. 22 to 32 Beach Street, Nos. 27 to 37 North Moore

Street, Nos. 161 to 163 Chambers Street, Nos. 141 to 149 Reade Street, Nos. 148 to 152 Reade Street, No. 92 Warren Street, Nos. 77 to 79 Hudson Street, Nos. 3 to 11, 14 and 16 Harrison Street, No. 179 Franklin Street, and No. 195 Franklin Street; we also have warehouses at Warren and First Streets, Jersey City, and at Nos. 41 to 47 River Street, Newark. In our New York City houses we have a capacity of 3,694,141 cubic feet of refrigeration, and in the Jersey City house 3,500,000 cubic feet. Our investment in real estate and equipment in this city is a little over a million and a half.

The following statement indicates the goods we handled between February 1, 1912, and February 1, 1913:

	N. Y. houses.	Jersey City.	Both.
Eggs (cases).....	186,519	427,645	614,164
Butter (packages).....	84,369	72,595	156,964
Cheese (boxes).....	103,998	1,507	105,505
Poultry (packages).....	96,337	133,767	203,104
Meats (packages and pieces).....	8,521	23,136	31,657
Dried fruits (packages).....	327,325	11,027	338,352
Nuts (packages).....	127,849	1,007	128,856
Grape fruit (barrels).....	29,957	34,922	64,879
Grape fruit (boxes).....	88,124	144,903	233,027
Various (packages).....	122,835	69,274	192,109
Total.....	1,175,834	917,783	2,095,617

The maximum holdings, with the dates, are as follows:

	New York houses.		Jersey City.		Both.	
Eggs (cases).....	7/19	154,430	8/2	408,459	8/2	562,404
(30 doz. cases)						
Butter (packages).....	8/30	65,229	8/31	71,533	8/30	136,777
(60 Avg. No.)						
Cheese (boxes).....	9/14	55,027	7/29	1,200	9/14	56,050
(45 No.)						
Poultry (packages).....	1/29	40,466	1/17	70,303	1/17	109,976
(65 Avg. No.)						
Meats (packages and pieces).....	9/23	2,485	12/28	12,299	12/28	14,159
(55 Avg. No.)						
Dried fruits (packages).....	5/28	222,180	7/1	6,984	5/28	226,832
(40 Avg. No.)						
Nuts (packages).....	6/12	91,033	8/12	794	6/12	91,611
(70 Avg. No.)						
Grape fruit (barrels).....	11/21	23,404	12/1	33,812	11/29	56,226
Grape fruit (boxes).....	12/7	59,311	12/23	81,670	12/19	136,203
Various.....	8/26	46,350	9/21	17,810	8/30	59,662

Goods stored with us are owned by local merchants, commission merchants, jobbers, wholesale grocers, and also by Western shippers and dealers in these products. We do not own these goods ourselves. We have warehouses and store for hire only. In some cases we make advances on the goods stored; as an average percentage of loans we figure 75 per cent. In some cases it ranges from 50 to 75 per cent.

In my experience of twenty-five years I have not noticed any effort or tendency to corner products stored. These goods are held by merchants all over the country and they are in competition with each other. Our buildings would not be sufficient to hold in sufficient quantities products to constitute a corner. I have made a study of methods affecting the number and diversity of the owners of products in cold storage, and would like to offer a statement that may throw some light on the subject.

The public cold storage warehouse men do not own directly or indirectly the goods stored, and their customers number many thousands of independent pro-

ducers, shippers, commission merchants, and dealers in the products stored, representing every section of the country. There never has been and could not be any combination or control whatever to regulate supplies and prices or produce a corner in these articles.

The maximum quantity of goods in storage during 1910, according to the reports of twenty-seven warehouses, is as follows:

Eggs.....	2,088,401 cases, 30 dozen to the case.
Butter.....	56,802,158 pounds.
Meats.....	30,169,252 pounds.
Poultry and game.....	28,379,136 pounds.
Fish.....	23,369,967 pounds.

The number of storers was 9,380. It should also be borne in mind that, of the storers, many are commission merchants, each of whom represents a large number of shippers and owners of the products stored. There were thirty-nine states represented.

The number of customers of the Merchants' Refrigerating Company of New York and New Jersey, which is typical of the large storage concerns, is, for New York, representing 23 states, 992 customers; for New Jersey, representing 19 states, 450.

As to the effect of cold storage on prices, the prices are governed by the trade law of supply and demand, which is operative as to stored goods as well as to other merchandise, and a study of market prices will demonstrate this fact. Cold storage facilities stimulate production, increase the volume of perishable goods, extend the period of consumption, and result in lower average prices to the public.

As to the effect of cold storage on health, it is certainly not detrimental. The modern cold storage warehouse has reached a high state of scientific development, and the sanitary, physical, and thermal conditions are, as they should be, of the highest order. The most rigid inspection and supervision would be welcome. The quality of the goods in the warehouses depends upon their condition when placed in storage rather than upon the length of time the goods are carried. We therefore favor supervisory regulation and inspection before the goods are received in cold storage. As a matter of fact the goods offered for storage are generally of the best quality and condition, as it is commercially unprofitable to store other kinds. Such goods may be carried in a wholesome state, as determined by scientific experiment and practical expert knowledge at least from one season to the next, twelve months later.

Time limits arbitrarily imposed would be absolutely destructive of the cold storage industry and gravely affect and restrict, and in some cases practically wipe out the industries that patronize cold storage houses. It is estimated that the investment in public cold storage warehouses that store for hire in the open market is over \$75,000,000. The flush period of greatest production comes but once a year. With no possibility of carrying the goods to the time of scarcity the function of the cold storage warehouse men would be entirely eliminated. The business could not exist on mere temporary preservation. At present large quantities are carried for from eight to twelve months. If the time were very much limited, goods would not be stored for the short period and, even if they were, the houses would be practically empty three-quarters of the time, which would destroy the business. The largest quantities are kept from six to ten months, but considerable quantities are held up to twelve months and frequently longer. It is not customary to carry goods longer than twelve months except under unusual conditions. It is not true that deliveries are made "from the bottom of the pile." This is evidenced by the large number of withdrawals of goods stored for only one or two months. In the case of eggs, those

stored in July are often removed in large quantities in two or three months, while the goods stored in April or May remain in store from six to ten months.

Any provision prohibiting restorage of goods in cold storage would be entirely inimical to the public interest and at variance with the best known methods of handling perishable products in order to keep them in proper condition for the market. It has been suggested to prohibit goods that have been in temporary cold storage during accumulation or in the process of pre-cooling from being subsequently stored at big centers after transportation in refrigerator cars. Also to prevent the transfer of goods from one cold storage warehouse to another in a different city under proper conditions, while permitting goods not protected to be handled under adverse conditions, exposing them to higher temperature. It was also suggested to prohibit restorage of goods that have been frozen and carried for a period near the point of production and prevent their being transferred under refrigeration to another freezer adjacent to the consumer, a process which can be carried out with entire safety and the goods preserved in a wholesome condition. Such provisions are absurd and unnecessary, and it is important that a complete study of all the facts in the case be made before such restrictive and destructive conditions be imposed on the industry.

There would be no objection to a law providing sanitary and improved methods of thawing, handling, and delivery of frozen goods to consumers, based upon full knowledge of all conditions and factors that enter into the problem, and for the purpose of adequately protecting the public health.

The Secretary of Agriculture, in his report for 1911, gives the following information as to average length of time that goods are carried in cold storage: The fresh beef received into storage during the year beginning with May, 1909, was kept there on the average 2.3 months; the fresh mutton, an average of 4.4 months; the fresh pork, an average of .9 of one month; and the butter, an average of 4.4 months. The poultry received during the year beginning with March, 1909, was kept an average of 2.4 months; the eggs, an average of 5.9 months; and the fish were kept an average of 6.7 months. The Secretary of Agriculture sent out blanks to all cold storage warehouse men in the country to arrive at definite information in regard to this matter, and the figures I have quoted are the result of that inquiry.

The merchants who store with us finance us and we in turn borrow from the banks. We take the warehouse receipt and the insurance certificate and we endorse it and take it to the bank. That is the customary way of handling that operation. We exact 6 per cent. interest. We have to pay, on an average, from 5 to 6 per cent. ourselves. We guarantee as well and do the work of handling the products and examining them. We really are guarantors of the paper. We endorse the paper and guarantee it to the bank.

A very large number of the merchants finance their own transactions. They will take the negotiable receipts and borrow directly from the banks, or they will sell their own paper. There are some merchants whose rating is so high that they can get all that they require on their own paper without collateral. They are, of course, very strong houses that have funds to carry their stock without advances.

There are positively no rebates or extras that would make the rate more than 6 per cent.

There are certain banks that make a business of loaning on these warehouse receipts, and we have a number of our own banks that take care of our business. They make a specialty of it. Such are the Irving National, the Fidelity Trust Company, the Aetna National, the Citizens' Central, the Market and Fulton, the Commercial Trust Company of New Jersey, the Hudson County National Bank of Jersey City, and others. These loans from the banks are all made on the notes of the shippers or owners, endorsed by them, and are accompanied by warehouse and insurance receipts.

I have a statement here showing how much the expense of storage, insurance, and interest adds to the cost of goods, which is an analysis of storage charges on food products at hypothetical cost prices in New York City. In that statement I mention the commodity, the hypothetical cost price and then the storage charge for six months, then the insurance at .416 for six months and then the interest at 6 per cent. for six months, and the total cost with storage charge expenses added, and then the increase in cost due to storage.

Commodity.	Hypothetical cost price.	Storage charge for six months.	Insurance at .416 for six months.	Interest at 6% for six months.	Total cost with storage charge expenses added.	Increase in cost due to storage.
Butter.....	.25 lb.	.01	.000725	.0075	.268225	.018
Poultry.....	.18 lb.	.01	.000522	.0054	.195922	.016
Eggs.....	.20 doz.	.0089	.00059	.006	.21549	.016
Cheese.....	.15 lb.	.006	.000435	.0045	.16095	.011
Dried fruit.....	.10 lb.	.00333	.00029	.003	.106623	.007
Nuts in shell.....	.15 lb.	.0075	.000435	.0045	.162435	.012
Nuts shelled.....	.30 lb.	.005	.00087	.009	.31487	.015
Green fruit.....	.50 bbl.	.50	.00725	.075	3.0825	.582

N. N. storage charge on six months basis, New York rates.

Insurance charge on six months basis, fireproof warehouse rates, .416.

Interest charge on six months basis, 6 per cent.

The percentage of increase in cost, covering storage, insurance, and interest on the various products, is as follows:

Butter.....	7.2 per cent.
Poultry.....	8.9 " "
Eggs.....	8 " "
Cheese.....	7.3 " "
Dried fruits.....	7 " "
Nuts in shell.....	8 " "
Nuts shelled.....	5 " "
Green fruit.....	23.2 " "

The comparatively high charge for storing green fruit is because it occupies so much space. Four or five tubs of butter, that is, \$60 or \$75 worth of butter, can be stored in the space occupied by a barrel of apples worth, say, \$2.50. There is a difference, too, in the cost of carrying different products, due to the necessity of making one room colder than another. Butter and poultry are carried at a very low temperature, zero or below. We call it freezing temperature. The other articles on the list—eggs, cheese, dried fruits, green fruits—take what we call cold storage temperature, that being 20 to 22 degrees above. We get higher rates for freezing service as that is more expensive to maintain.

These computations are all based on a six months period, although very few remain in as long as six months.

We have no railroad connections in New York, but our Beach Street warehouse and our North Moore Street stores are directly opposite St. John's Park or face the depot. Our warehouses are located in the downtown section because the trade is located there which deals in the articles we handle. We are near the downtown terminals where the goods arrive.

We do not find much difficulty in trucking products through the streets because of congestion. We find more delay in outgoing shipments than in incoming. Occasionally there is a block due to temporary weather conditions. Our customers bring their own stuff in to us in their own trucks.

Some of the goods stored in New York come in carload lots and some in less. Butter usually comes in less than carload lots, because the creameries make up 50 and 60-tub lots. Poultry comes in less than carload lots mostly. Eggs, in April and May, come in sometimes in carload lots, but most of the time in less than carload lots. Green fruits come both ways. That is true of New York.

In Jersey City we have warehouses that are directly on the tracks. We have very large capacity there. We have three and one-half million cubic feet of capacity there, with direct connections with all roads, and our carload business is stored in Jersey City very largely.

We have terminal connection there with all railroads. It works very well indeed. We are directly on the Pennsylvania line and we are right across the way from their freight yard.

The goods are delivered from Jersey City in lesser lots as needed. We have our trucks there and make the deliveries ourselves from Jersey City to the trade here in New York. They can truck themselves if they choose to. We do it for the convenience of the trade and to facilitate business. We thought at first we would make deliveries by the carload to accommodate the trade, but found the trade liked the goods delivered in smaller lots as they sold the goods. Our trucks come across the ferries. We charge the New York rates where we make a charge. Where we make free deliveries, the storage rate in Jersey City includes the free delivery. This delivery is to any point in the produce district below 14th Street. The rates to Brooklyn, The Bronx, and Queens are more; we have to charge according to the service.

Track connections would be of advantage to our New York stores for the full carloads; for less than carloads it would be difficult to work that. We receive the vast majority of our goods in less than carload lots consigned to different consignees, except in Jersey City. If we had a proper railroad terminal, so that they could make a continuous passage instead of making a stub end of the tracks, that would be very good.

Our warehouses in Jersey City are directly on the Pennsylvania Railroad. The railroad connection is made there by a switching arrangement between the Pennsylvania and all the other roads by which they receive foreign cars over their lines and deliver to us at no extra charge. The foreign roads absorb the switching charge. Each road has a point of connection beyond Jersey City or Newark, and there is a road called the Jersey Junction Road that ties them in. They take cars from the other lines, but not packages. Our warehouses in New York all require cartage to effect transportation of goods from the railroad terminals.

In New York City our investment is \$1,581,547.91; in Jersey City it is \$979,677.16; in Newark it is \$116,000. Our warehouses are open to the trade generally, no matter what the quantity of goods they desire to store. We have customers of all kinds in different states. A man may put in 5 or 5,000 barrels of apples. Anyone who wants to put in any surplus production until the time of scarcity is welcome and we are glad to do business with him.

PROPER HANDLING OF FOODSTUFFS FROM FARM TO MARKET

DR. MARY E. PENNINGTON,

Bacteriological Chemist in the Bureau of Chemistry, United States Department of Agriculture, Located in Philadelphia

I have been in this work since 1905. In the course of my work I have been from the Pacific Coast to Budapest; I travel from 30,000 to 40,000 miles a year—between half and three-quarters of the time—and visit the largest cities and the smallest

towns. I have occasion to visit the markets of the various cities incidentally in connection with the work of the Department of Agriculture and the handling of perishable products.

Visiting the markets is only incidental in the course of our study of marketing. The work of the Department with which I am connected is the study of the handling of perishable products from the source of production all the way to the consumer, which deals first with handling at the source of production and then with transporting, and then with warehousing if the marketing is not immediate, or, if it is immediate, with the markets of the towns and cities and then with the retail shops and then with the consumers.

In the first place, we have the present condition of the population of the country to consider. We have piled our people up in cities twenty stories high in great communities such as have never existed before, in this country at least; and those communities produce not one thing they eat. By doing this we have thrust the producer farther and farther away from the consuming center. Twenty-five years ago the City of New York could import a considerable portion of the foodstuffs which it used from nearby centers. At the present time, as nearly as it can be estimated, the average haul to the City of New York of the foodstuffs it eats would consume four days by fast freight. The food material which comes here comes from the Pacific Coast—from almost every quarter of the world which produces anything edible. A very large proportion are spoiled foodstuffs coming from 1,000 miles or more away—poultry, for instance, and eggs and butter, the major supply of which are produced in the Mississippi and the Missouri Valleys and shipped from there East and West to the Atlantic and to the Pacific Coast.

Aside from the distance that we must now transport food products, we have to face also a seasonal production of foodstuffs. By this I mean that in one season we will produce a certain commodity to a greater extent than consumption requires; and in another season we will produce almost none of that commodity. Poultry and eggs again will serve as a good example. We have eggs produced between March or April and July or September; we have broiling chickens produced in July, August, and September; we have roasters in September, October, and November, and perhaps on into December. At those seasons the supplies of those articles are in excess of the demand. During the rest of the year there is practically very little produced. We must then conserve that excess of the season of plenty until the season of scarcity and use it. We have done that by canning, where heat has been the preservative; we do it by pickling or smoking, and we do it by cold storage, where cold is the preservative.

Now, primarily, the success of the handling of all foodstuffs which are perishable lies in the way the material is produced and the way it is treated all the way from the source of production until it reaches the consumer. The Department of Agriculture must help the country to save the waste, which is something enormous, and also to keep, so far as possible, the quality at the farm when the produce reaches the consumer. In order to do that we must better the present ways of handling all the way from the producer to the consumer. The handling at the source of production is, of course, fundamental. It does not, perhaps, enter so prominently into the municipal problem, but that is where the work begins. The handling at the source of transportation is nearer your problem, but is yet somewhat outside of it.

Granted for argument that no material is wasted by the producer in his handling, and that no material is wasted by the carrier in its handling, we still find that there is an enormous waste at the market center. I obtained some figures from the New York Board of Health of the amount in pounds of foodstuffs condemned and destroyed by them during the year 1911. I find that there are in round figures 6,500,000 pounds of fruit and 2,500,000 pounds of vegetables and 73,000 pounds approximately of

eggs and 351,000 pounds of fish and nearly 95,000 pounds of miscellaneous articles. Without exception almost, I think those foodstuffs were destroyed because of decaying. The question which interests the city primarily is, how can that decay be prevented, granting that the goods come here in perfect condition? Of course they do not. But the handling at the source of production is growing better and better and the handling during transportation is growing better and every year sees advances. As we view the matter from the Department of Agriculture, the least advance in the matter of handling is in the large cities.

Having got the goods to the city, what are we to do in order to get the commodity to the consumer in just as good condition as it reaches the market center? It would seem to us that the two fundamentals are expedition and refrigeration, and they must be seriously considered; and we must have better facilities if the work the Department is doing at the producing centers is to bear its legitimate fruits.

We find now all over the country that refrigerator cars loaded with well handled material and brought in on track, stand for varying lengths of time until sidings are available or until truckmen appear. We urge that all producers ship in carload lots because, undoubtedly, there is less waste and better handling obtainable by carload shipments than by less than carload shipments. That doctrine has resulted in the combination of several shippers who have not individually enough for a car but who collectively can fill a car. They ship to different consignees. The car is therefore opened on the track a number of times and its contents are removed by different truckmen. The material is trucked for various distances and the haul may be from fifteen minutes to several hours, and must be made no matter what the atmospheric conditions may be. We know that a refrigerated and perishable product, for its better conservation, must be continued in an even state of refrigeration until the consumer gets it. We know, with the ordinary system of marketing which prevails almost entirely throughout the country, that the refrigerated articles, such as poultry, eggs, butter—all products which are shipped under refrigeration—are subjected to most damaging conditions before they reach another refrigerated environment.

It would seem, to save waste, that our refrigerated cars should unload directly into refrigerated spaces and that this trucking system should so far as possible be abolished and that there should be an abundance of refrigerated space for the perishable stuff, for the perishable products that are coming into a community to feed that community. It would seem also that during the season of plenty, when more commodities than the consumption demands reach the market, there should be a reasonable method by which products coming into a city should be conserved. That means a continuous chain of refrigeration.

Years before the handling of perishable products had been studied as at present, the arrival of produce at the market center in good condition depended largely on speed, and all the energy of the community was turned in that direction. At the present time, with modern methods of handling stuff, with refrigeration to assist, the methods that are used in caring for foodstuffs is more important and speed is not half so important as proper environment. We find, for instance, that we collect eggs fairly fresh from the country in July or August, when weather conditions are the worst for the keeping of the eggs, and we chill those eggs immediately where the packer has mechanical refrigeration and we ship those eggs in refrigerated cars, we will say, for a haul of six or seven days. We find those eggs reach the market centers in practically as good condition as they left the producing center. They are then dumped from the car onto the dock or pier somewhere, and stand out in the summer sun for hours, or are unloaded in some railroad shed and stand under cover, which is not so bad, but still not good enough. The eggs sweat. The eggshell becomes wet. That egg will deteriorate and it will deteriorate rapidly. If, on the other hand, we have an unloading truck which discharges those eggs directly into a re-

refrigerated space, the eggs are excellent food and a good deal fresher in many instances than eggs produced 100 miles from the consuming center and shipped without refrigeration. Time in those instances is not half so important a factor as the factor of good handling.

We find in poultry that if the poultry is well handled at the producing center, properly dressed, packed, and shipped, and is marketed under refrigeration, it is still an edible bird and in good condition three weeks after cleaning, without being hard-frozen. If it is hard frozen directly after being killed and dressed, it is a good bird for consumption a year after killing.

The waste of our present system of marketing is exceedingly difficult to estimate. I can estimate it approximately on the two commodities that I have been using as illustrations, namely, poultry and eggs. The value of the egg crop in the United States is approximately \$500,000,000 every year. We have at least \$50,000,000 actual waste between the producer and the consumer—eggs which are produced but which are never eaten because of decay or breakage or other results of bad handling. The value of the poultry of the United States is approximately \$250,000,000, and it is perfectly safe to say that 10 per cent. of the poultry produced never reaches a consumer because of decay in the various forms of wastage. The Department believes that better handling of perishable goods will save for the people of the United States a vast amount of foodstuffs which is now wasted. In the teaching of the people who handle the foods to handle them better, there will necessarily be a rise in the quality of those foods, even of those which are now the very best. And the Department also believes that the saving of that waste will not only mean a better and more plentiful food supply for the people, but it will necessarily have some effect on the price of the food to the people. It will tend to lower the price. The consumer and producer now are undoubtedly carrying between them the loss, which is loss in quality as well as loss in weight. If we can avoid the waste, we will avoid the loss. In our marketing now there is a lack of system generally and absolutely inadequate facilities. We have no proper terminal facilities for unloading the perishable produce. We have no proper facilities for holding that perishable produce after removing it from the refrigerated cars until it is finally taken to the consumer. Very few of the wholesale men of the markets are properly housed for the best handling of their goods. A great many have equipped themselves with mechanical refrigeration which helps enormously, but our produce sections have not kept pace with the work which the growing cities demand of them.

There should be a direct connection between the incoming food supplies and the wholesale dealers, which shall be, so far as possible, continuously refrigerated. There also should be refrigeration abundantly and equably maintained throughout at least the marketing by the wholesaler, and if possible the marketing by the retailer. There are certain progressive retailers who have now installed mechanical refrigeration. How we are going to transport the produce from the wholesaler and the wholesale markets, where it must apparently be gathered on its arrival at the market centers, to the retailers, is a question. It has been solved to a certain extent by the refrigerated or insulated trucks that are used in South America and also abroad. They are used in the South American beef trade, and by the receivers in England. It would be perfectly logical to suppose that such a series of insulated covered trucks might be used where the refrigerated produce is transported from one part of the city to another. We feel that the development of railroad terminals is the keynote that applies largely to the situation. The ideal thing is that there shall be a union terminal with refrigerated warehouse facilities. If you can have water transportation as part of your union terminal, so much the better. Such facilities as having cars run directly into a refrigerating place are in use by private warehouses in a number of places in this country.

The difference between the systems of dry and wet packing of poultry for market is this: The old fashion of handling poultry and the way your poultry is handled when killed, almost without exception, is to kill the chicken, bleed it, take the feathers off by dry picking, and then remove the natural heat by immersing the bird in cold water first and then in water and ice, and finally packing it down into fine ice and shipping it in either by freight or express. That system is also used by the smaller packers and less progressive packers, even in the far Western districts. If used in the far West, and the produce is subjected to the usual kind of marketing, it means almost three weeks before the produce reaches the consumer. During that time the water from the melting ice is removing from the carcass of the bird the most desirable proteids, both as to flavor and nutritive properties. It is not only dissolving out of the bird some of its constituents which we are desirous of keeping, but the water is soaking in as well. Therefore, while the consumer is losing foodstuff, he is also gaining water for which he is paying chicken prices. Ice-packed poultry, taking 20,000 pounds as a uniform carload, means that we would have an actual loss in dollars and cents, estimating the flesh to be worth 20 cents a pound, of about \$450, and you would have something like 1,400 pounds of water absorbed. That system of ice packing is in vogue in the cities, and a very large amount of poultry handled with your Eastern and Western cities, too, is ice-packed. It is the method of the smaller dealer who has no adequate facility for handling the product as he should. It does not preserve so well as the dry packing.

The dry-packed bird is killed and picked in the same way, and then the carcass is put in a room mechanically chilled to a temperature of from 32 to 38 degrees. At the end of 24 hours the carcass is cooled through to the temperature of the room. It is then packed, ordinarily, in boxes holding twelve birds, rather than large barrels holding 250 pounds or more, and shipped in refrigerated cars and goes through to the markets under refrigerated conditions, so that it finally reaches the market without water ever touching it. The keeping is infinitely better and the quality of the bird positively improved. Wherever you have excessive moisture there is bound to be excessive bacterial growth. The ice-packed bird is a most excellent culture medium. The dry-packed bird reduces the chances of the organisms to a minimum.

I do not know the amount of money that New York City loses each year in these various causes of loss. I should like to get those figures. I have never found any way to get them where they seemed to be accurate. The nearest thing I have found is the record of condemnation of the New York Board of Health. The amount of eggs condemned in 1911 was about 72,785 pounds. Their value might average 25 cents a pound the year round. There is no process known for producing eggs in the off season except in very small quantities as compared with the general food supply. Up to the present time such factors have not succeeded in producing much material except for the very healthy, and hardly enough for them. For providing in times of plenty for the storage of products to be used in times of scarcity, the cold storage warehouse is the means by which we are obtaining the best results at the present time. As to whether it should be public or private, I have no opinion.

The wholesale terminal markets would be under some sort of municipal provision necessarily. I do not see how you could have the facilities which are apparently necessary for the proper handling of foodstuffs without some provision by the municipality. It might be possible, but it does not seem so. I do not know of any place where municipal retail markets have been a success. That has been tried abroad. My information on the subject is not very extensive. I tried to look up the subject some time ago, but it did not seem very promising.

Goods could be brought to market by means of refrigerating cars when the lots are less than carload lots. The railroad takes less than carload lots and so arranges that the various shippers can put their products into the refrigerating car and then

the company delivers that at the market center in carload lots. Therefore, the terminal facilities would be of as much advantage to the less than carload shipper as to the carload shipper. I think it would be absolutely necessary for a proper terminal that it should have refrigerating facilities. I do not see how perishable products could possibly be held or handled without refrigeration, and an abundance of it. Fruit, for instance, should continue under proper environment until finally disposed of, and refrigeration is an essential to the environment.

When it comes to a question of prices of eggs, for instance, there are so many factors that enter into it it does not seem possible to separate them. The ignorant consumer is the chief cause of excessive prices. I should educate the public. It is just this way: The consumer refuses to believe that he cannot get milk this evening that was milked this morning as it was 25 or 50 years ago; and he will not believe that the eggs that come to him were not laid yesterday. When he is told it is almost impossible to get eggs laid inside of a month at the present time he does not believe it. He demands his fresh eggs when they don't exist. It is impossible for him to get them. The egg supplies coming into the City of New York are practically nothing at all in proportion to your consumption of eggs. Most of the eggs now in New York were started in April.

There is 10 per cent. actual loss in the egg trade; the deterioration in quality is in addition to that. The fault lies all the way from the producer to the consumer, straight through. The amount of deterioration due to bad handling at the point of production, in collecting the eggs from the farms, depends entirely on the part of the country. In certain parts they have the peddler system, but in other parts it is entirely railroad delivery, and in other parts entirely farmer delivery. The egg trade varies everywhere. In Tennessee and Kentucky we have the peddler system. In the western country, Kansas and Iowa, it is almost exclusively railroad delivery. Deterioration is first caused by the farmer, because he does not market the eggs promptly; secondly, the dealer is at fault because he holds them too long. When they reach the first concentrator who has a mechanical refrigeration plant and understands the handling of his products, deterioration almost stops when it comes to eggs.

To prevent "sweating" when the eggs are removed from the refrigerator cars they should be warmed up gradually, so that, when they finally come into the outer atmosphere, there will not be that abrupt change from a temperature of 50 degrees to a temperature of 80 degrees outside, a difference of 30 degrees. They should be put where there is a good circulation of air and not too great a change in temperature. There are a number of warehouses with graded rooms already in existence. It is a practice among warehouse men who understand their business. If you have no refrigerating space then the best thing you can do is to dry them off as quickly as possible. Fanning is very good.

I would educate the public not to ask for fresh eggs when they are not obtainable. The public has an idea that the article that bears the higher price is of a higher quality, which may or may not be so. The work of our department naturally has to do with refrigeration. Our object is to find, if possible, better ways of doing the work which has to be done than at present exists. We make recommendations for the benefit of refrigeration. Information is given out in the form of circulars and bulletins which are published from time to time as the material accumulates. It is entirely optional with the community or industry whether it follows our recommendations or utilizes the information given.

In 1911 there was destroyed by the Board of Health 8,435,233 pounds of fruit and 2,567,200 pounds of vegetables. There is no data given as to whether the larger percentage of that came in by steamship or by railroad. It does not pretend to give

the whole waste of New York; it is only a drop in the bucket. In 1910 the fruit destroyed was over 12,000,000 pounds and the vegetables over 7,000,000. So the condemnation by the Board of Health was cut down greatly in 1911. There seems to have been an improvement in shipping conditions generally from year to year. But the figures as they still stand are entirely too much for a hungry community to waste. Some of the waste is due to the shipping of immature fruit, but the larger part is due to decay. A great deal is due to improper and insufficient terminal facilities here, which often compels railroad companies to hold cars out from three to ten days, so that the product is totally destroyed before it reaches the city at all. A very large proportion of it is due to the railroads, that still have much to learn. But we find that, where the goods are loaded into refrigerating cars under the jurisdiction of the shippers and where the shippers have handled their property properly, unless there is serious delay in transportation, the goods arrive in good order, even such goods as dressed poultry, and that is a difficult commodity to ship.

The pre-cooling system for some commodities is a decided success; others are still waiting to be investigated carefully. It has been used for peaches, cherries, and raspberries. With oranges it does not make so much difference; good handling means more to oranges than refrigeration, that is, not breaking the orange even to a microscopic extent. Most of the pre-cooling is done in the southwest.

I do not think we can abolish the middleman, not by any means. In the new system of markets I think he will be part of the wholesale market. He will perform a necessary service and, in so far, he will be retained. There may be some functions that the present middleman performs unnecessarily. With the lack of definite information that we now have concerning markets as they ought to be, I should not like to say wherein his functions are unnecessary. Wherein they are unnecessary, as we work out this problem, we shall eliminate him. I think the establishment of terminal markets would increase the number of men employed and create more business. I think that the additional business would be sufficient to take up the services of all now in business and probably more. It would merely mean a new alignment of the entire industry. There would be no danger of any middleman being thrown out of business by this change.

Good products will increase consumption. I was told a few days ago of a guaranteed egg supply obtained by a certain hotel in Toronto where, in one year, the consumption of eggs increased 100 per cent. People ate twice as many eggs in that hotel, and, as a result, there was a very much increased business in that hotel. The eggs were always good there and people went there to get them. That is a rather exaggerated statement of a general principle. I do not mean that everything would be so increased. But better handling would result in lower prices and increased supply. Wherever we have lower prices we have an increased consumption. We pay an enormous amount now for waste, for something we never get.

I would recommend New York City now to gather its incoming facilities into a point as nearly as possible; unload expeditiously into refrigerating quarters; as long as the produce must stay in that environment keep it in the same state of refrigeration and get it out of your refrigerating centers to the consumers as promptly as consistent with good handling. I know of no other way to save waste and lower prices than by establishing terminal markets.

MARKET CONDITIONS IN THE BRONX

GEORGE P. ZIFF,

Salesman for a Packing Company

My work covers the territory from 14th Street in Manhattan to Mt. Vernon. I visit the retail grocers in that territory every day. I have found in the last three years that the trade in fresh vegetables which was formerly in the hands of the grocers is being eliminated from their business, because the grocers will not take the long trip down to the markets in the lower part of Manhattan or to the Harlem Market early in the morning. In the past three years there have been more stands opened outside of meat markets and on public highways than in any other time in the history of The Bronx. The storekeepers let out the privilege of stands in front and have given up the produce business. From Tremont Avenue down the majority of the vegetables in that territory are handled in small stores. They put in a small line of canned goods, but they do not handle the full line and, therefore, cannot be classed as grocerymen. Most of the retailers operating in The Bronx and Manhattan and belonging to the Retail Grocers' Association have given up that line of business on account of the difficulty of getting stuff from the markets.

Certain commission merchants come down to New York and buy and ship their goods up to Yonkers. From there they resell the goods in The Bronx down as far as Spuyten Duyvil. They also supply Mt. Vernon and New Rochelle. It takes four or five hours to get the goods up to Yonkers, and it is almost impossible for the grocer to get them in time for the market of the day. Consequently the vegetables are held over until the next day for sale. If we had a market in The Bronx where they could buy a full line of goods that would obviate the difficulty. We should have a large terminal market, a market where the railroad cars could be received and the goods distributed to the retailers and the commission merchants and the direct receivers.

I am familiar with the trade as far north as Poughkeepsie. That territory gets its supplies from New York mostly. The dealers send their buyers down, who arrive late at night, between 1.00 and 4.00 A. M., and buy their goods and have them shipped up by boat that day. Then they ship east from the river through into Pawling, West Patterson, etc. If a receiving station were established in The Bronx they could get their stuff much more quickly and directly—easier and cheaper. I have heard men in Peekskill and the surrounding country speak of that. To get from that upper territory to High Bridge takes about an hour; from High Bridge to 42d Street takes about 20 minutes; then from 42d Street they must take cars down to the markets where they are going to buy. After they do their buying they return to their places of business in time for the next day's market. They take a chance on getting a few hours' sleep. One man may purchase for two or three, but the great trouble is that they cannot get their goods for sale the same day—they have to lie over for 24 hours. I have known of buyers from Greenwich, Conn., coming in in the evening on the late train and going back on the first one out in the morning. This is most laborious and expensive. There is also great delay in the delivery of the goods, so that the quality suffers and there is great waste. Possibly these things could be eliminated if we had a large terminal market in The Bronx. A man could get into The Bronx in an hour or an hour and ten minutes from almost anywhere within a radius of 50 miles, buy his goods there and have them reshipped by an express freight service and be able to offer them for sale that same day to the general public. It is conceded that where vegetables are held over from day to day there is a loss sometimes running into 20 per cent. and 30

per cent. Lettuce, corn, cabbage, and other farm products—the longer they lie in a hot car the more they depreciate in value.

I have heard it said that, if there was a general market in The Bronx, the merchants of Mt. Vernon, New Rochelle, Larchmont and Mamaroneck, Harrison, Rye, Portchester, Greenwich, Sound Beach, Stamford, would only be too glad to come down and patronize it. Some would come as far up as Pleasantville on the Harlem Railroad. I know of one merchant who comes to the Harlem Market and would rather pay the additional charge he has to pay there than to go to the down town terminal. He does not want to lose the time and he would rather pay the little addition that they charge in the Harlem Market.

The Gansevoort and West Washington Markets open from one to three A. M. It takes a grocer in Tremont Avenue two and one-half hours to get down there. He has to get there by five o'clock if he wants to do any buying. If he gets there late the choice goods are all sold and he has to take the leftovers. The Bronx today is being supplied with citrus fruits and some southern vegetables in this way by small commission men—they will take a load of whatever truck they buy at the terminal here in Manhattan and take that truck up there for general distribution. I have found, through my own experience and through inquiries, that the additional cost runs over 15 per cent. above the selling price down town. If a box of oranges is worth \$2.50 on the dock down town, it would cost from \$3.25 to \$3.35 in The Bronx. I think that extra cost could be eliminated by delivering directly in car-lots to a terminal in The Bronx. The New York Connecting Railway is building a bridge from Long Island to The Bronx. That will give us a direct connection.

I have heard that at present Boston is supplied with vegetables 24 hours earlier than the borough of The Bronx. In other words, a train load of produce arriving at Jersey City at noon and destined for Boston is transferred by floats to Mott Haven and one of the fast trains is there made up and the stuff is sent out to Boston that afternoon. During the afternoon the balance of the goods are brought over to Manhattan and offered for sale the next morning. Meanwhile the goods that have gone through to Boston have arrived there. In other words, the Manhattan and Boston markets open at the same time with the same class of goods. Now, before The Bronx can get its goods The Bronx buyers have to go down town and buy in open market and then cart the goods up and they can hardly get there in time for business that same day, as most of the vegetables have to be offered between the hours of 9 A. M. and 2 P. M. for the day's consumption. Consequently, The Bronx is usually 24 hours behind Boston in the buying of these goods, which arrive at the same time in Jersey City.

If we had proper terminal facilities in The Bronx the New York Central could deliver goods within two hours after the train arrives at Spuyten Duyvil. Market facilities up there will assist the people very much. The Bronx is growing very fast: three years ago I had a little over 900 grocery stores to serve and now I have over 1,700. The sort of market we should have would be a large place where the railroads could bring in their cars and unload in such a manner that trucks could drive in and load up for general distribution without delay. It should be a general railroad terminal for all railroads—a union terminal. It is impossible to overestimate the inconvenience it is to a groceryman to buy down town when he lives in The Bronx. I have heard grocerymen say that they would not handle any vegetables because they would not get up at four o'clock in the morning and go down town to the market for anybody, and it does not pay them to handle them otherwise, because the overhead charge is too much. The sooner we get these railroad terminals and distributing points the better for all concerned. I certainly think that, if the grocers throughout The Bronx had opportunities to get their vegetables directly from a market in The Bronx that would supply a general line of goods, they would

begin to handle vegetables again. I think that trade in vegetables has decreased somewhat in The Bronx in comparison with the normal increase that it should show in the growth of The Bronx. The groceryman who does not handle fresh vegetables naturally will talk canned goods, and, if he cannot sell a customer fresh vegetables, will try to sell canned goods. That has a tendency to reduce the quantity of fresh vegetables sold. Since proper facilities have been provided in The Bronx for the receiving of potatoes we can buy potatoes as cheap as anybody in New York City, and that is about the only thing we can buy as cheap or cheaper. Those are Maine potatoes coming down on the New Haven road. I think, if the same facilities were furnished for other vegetables, the price would diminish in the same way.

MARKET CONDITIONS IN STATEN ISLAND

SIDNEY A. REEVE,
of Staten Island

I am a consulting engineer, resident in Staten Island for the past three years. The markets of Staten Island are, so far as my knowledge goes, all retail markets scattered throughout the several villages of the island. There are no public markets. To my knowledge there is one commission dealer who deals in wholesale produce. The farm produce used there comes from the New York markets—although Staten Island grows large quantities of farm produce, it is all brought to New York and then brought back and sold at retail. Garden vegetables are grown on the island and some eggs and poultry.

Staten Island comprises about 46 square miles. The population is much diffused in villages more or less separated from each other. I should say that less than half of the island is devoted to farming. The produce is taken to New York in large two and four-horse trucks during the night. It reaches the ferry from eight to ten in the evening and goes mostly to Gansevoort Market; some of it goes as far as Harlem. The trucks stay in the markets all night and leave in the early morning on the return trip. All the larger producers sell at wholesale.

The garden produce used in Staten Island is brought from the New York markets in the wagons of our retail dealers. There must be over a score of them at least, each one having his own horse and wagon. We do not consider that the market facilities of Staten Island are at all adequate for our needs. There are no facilities except these small retail stores, all drawing supplies from New York, with the exception of the small percentage which comes through the local commission merchants. None of the produce comes directly by boat.

The Baltimore & Ohio is the only railroad that has its own terminal in Staten Island. The officials of that road have been desirous of developing the car-lot business in bringing in produce to Staten Island, but there are not proper terminal facilities. The road traverses the area all the way from Chicago and Louisville east, and has transfer facilities with all the trunk lines, so that any garden produce coming in carload lots from the south and west could be transferred at convenient points of the Baltimore & Ohio for delivery at Staten Island. This road traverses one of the most fertile districts in the United States, where large quantities of fruits and vegetables are produced. We get, also, car floats from the New Haven railroad in the Harlem River section. We have no carload shipments of garden produce going from Staten Island to my knowledge.

I think there should be established a wholesale cold storage and general storage terminal at St. George, with retail distributing centers at various points in the island. I name St. George because that is the railroad terminal and the ferry

terminal, and, therefore, is the point to or through which all the wholesale produce produced in or passing through the island must pass. The farm wagons all go through to take the ferry and the railroad cars which unload or load come within 100 yards of the same point. Whatever Staten Island needs should stop there. It is perfectly absurd to cart it all the way over to Gansevoort Market and then require our retail dealers to go there and bring it back again. That necessarily and obviously adds to the cost. I think we raise considerably more than we need.

I think a good deal of distribution to the ultimate consumer could take place there, through counter sales or wagon delivery on telephone orders. The bulk of the native population of the island comes to St. George twice each day, going to New York City and returning and could stop for purchases without loss of time or money. Since the Baltimore & Ohio terminal was built in St. George that place has naturally grown into the center of transportation for the island, and one facility after another has been brought to that point. The ferry and trolley terminals are not yet completed there, so that the opportunity for the actual construction of a market terminal has never presented itself, but definite plans will be presented within a few weeks or months. There is a large yard there with a wide space under the new trolley platform which has as yet been designed for no use whatever and is entirely open to development. It is about 400 by 250 feet and ranges from 15 feet in height at one end to 26 feet at the other. The property is owned by the city and is under the control of the Department of Docks and Ferries. It abuts directly on the freight yards of the Baltimore & Ohio Railroad and the Staten Island Rapid Transit Road, so that nothing but the building of platforms and similar facilities will be necessary. I think the population of the island, which is about 80,000, warrants a wholesale market and cold storage facilities.

The location at St. George is ideal. The space there beneath the trolley platform could not be improved upon for receiving important foods by carload or boat load, and Staten Island produce by wagon load. Local farmers cannot afford to sell in less than wagon load lots, and existing small retailers cannot buy so much at once. Consequently, each night the ferryboats are loaded with Staten Island farm wagons hauling produce to Manhattan markets, and each morning with the wagons of Staten Islanders going to haul back fractions of these same wagon loads. The farmer could get a higher, and the retailers a lower, price if the stuff never left the island.

A trolley freight service to bring up the products of the island might be of value, but at present most of the trolley lines do not traverse the agricultural districts of the island, but reach more the residential districts.

A popular movement arose about a year ago which resulted in the formulation of a plan for a coöperative organization to operate a wholesale and retail market at St. George. The plan included provision for cold and general storage. To organize the method of food supply into an efficient system was the object, cutting out middlemen, unnecessary handling, duplication of profits, etc. The island is capable of producing all the garden stuff, poultry and eggs, and much of the butter and fruit consumed by its inhabitants. There are now too many dealers between the farmer and the retailer.

Cold storage is also an essential of everyday food supply. Most people think of cold storage as used only to keep meat from January to July, or butter from June to March. They do not realize that nearly all the stuff they eat has been in cold storage for a few days at least. Food cannot be shipped into a big city by steamer-load, carload, or even farm wagon load without it being necessary for the receiver to put part of it immediately into cold storage, selling fresh only what he can dispose of immediately. Much of our food is bought and sold speculatively several times while in cold storage, or is shipped from warehouse to warehouse repeatedly

as it changes owners. Each sale increases its price; each handling reduces its quality. The old-fashioned open market, where the producer sells to the retailer, is gone, never to return.

It is our wish and determination to have a terminal market. If the people are not ready to accept a coöperative organization, we are going to have a commercial organization take charge. Representatives of big commercial organizations have been there and gone over the grounds. I am, however, going to push this thing as far toward a coöperative plan as I can.

MARKETS IN GERMANY

MR. FRANZ MARQUARD

I had occasion last summer to examine the market conditions in Europe during July and August. I spent over two months there. I found market halls in Cologne, Frankfort-on-the-Main, Breslau, and Berlin. The latest market halls in Germany are in Munich. They were finished last March. The Hamburg market was not yet finished, but was already being used.

Cologne I visited first, but it was hardly worth visiting. The complaints about the market hall were very great, the main one being that it wasn't near enough to the railroad. It was about 300 feet away and produce had to be carted over by small hand trucks. The market takes in about a city block. It is wholesale and retail, with auction sales. It is under the control of the city. They have one market building—a large hall with peak roof—and several open market squares for wagons. Most of the produce handled comes by railroad. They open at two or three o'clock in the morning and auction sales are held early—at four o'clock—by the city auctioneer, at which the retailers buy. The stuff is directly consigned by the city to the auctioneer. The auction method is the quickest way of disposing of the goods. In half an hour or an hour everything is disposed of. After that, during the day, there were private sales. The dealers have stalls in the market—separate places allotted to them where they exhibit their goods and conduct sales.

They have cold storage in the casemates where space is rented to the stand holders by the square meter. The condition of the vegetables in the market was good. They were fresh.

One difficulty about the market was that the surrounding streets were not wide enough. Although there was a pretty large space where they could stand, the wagons of the farmers and dealers had difficulty in coming and going in the morning. The Cologne market is an antiquated market—the modern ones are better.

In Munich I found a new market hall in connection with a bonded warehouse. The market itself is about a block and a half each way. The bonded warehouse is about 40 by 300 feet. It is the central point for the distribution of oranges from Italy and cheese from Holland, which come to this warehouse directly by carloads and are sold there in smaller quantities to wholesalers. The method is by private sale. The wholesalers pay \$1.10 a square foot for the sales stands and 14 cents a square foot for cellar space.

They miscalculated the size of the market needed; they had estimated how much the city was using up to that time, but, since the market was opened, they have found that the farmers knew they would get a good market and a certain market for their produce, and they have been sending so much stuff to the market that they have not room enough to handle it all, and, as they have no more space, they will have to build another market hall. I think this one was working with a deficit the first year, and the manager told me the one big complaint he had to make was that the hall was not built right. The ventilation was not good and the draughts in winter

very strong. Consequently many farmers prefer to send in their goods to the auctioneer rather than come themselves.

The market is under city control. They have the usual rules—just as in Cologne—very strong rules about the visiting of the market and about the selling. For instance, the farmers and gardeners coming there were allowed to sell any quantity, while the dealers were not; they were restricted to certain limits. For instance, they have to sell not less than a barrel or a bag of potatoes, while the farmers themselves can sell in any quantity.

This market is on the railroad and it was built on the outskirts of the city because there wasn't room enough within the city itself. It is about a 55-minute car ride from the center of the city, and housewives go there and buy. There is only one railroad going into it, but there is a city railroad that connects.

Munich is a very cheap market, as it is in an agricultural district. There is about as much stuff brought in by wagon as by train, except for the imported stuff. They have very good cold storage facilities at the market. There is one street running all around the casemates down below, and the upper story that is even with the other streets is connected by little bridges, where they cross over a lower street, and so the trucks can drive directly into the casemates and deliver their goods there, and inside they have lifts to get the stuff to the selling floor. Each stall is provided with one.

The main point about the market that would be useful to us is the close railroad connection; and the trolley connection so that the people can go there and buy. They do not have a retail section but the wholesale stores sell retail in the corners and the lesser places are taken up by the farmers and retailers.

The best market was in Hamburg, the latest. They have water connection and railroad connection. The market hall itself is very small. When it is finished there will be only two small halls about 80 by 100 feet each, but they have an open place, an open square with casemates below. It is about four city blocks in size and has already proved too small. They made the same mistake as in Munich: they built too small; and in Hamburg they built in the center of the city. The people along the Elba are not only farmers but shippers themselves; they take little sailboats and put their stuff in and so they come by boat to market.

The market is under the control of the city. They rent out space to the standholders. They do not know yet how well it is going to pay because the market is hardly opened yet. They will have auction sales as soon as the railroad cars come in. The railroad comes over a bridge and runs along an embankment 20 to 25 feet high, and under that embankment are casemates. They have built 14 large halls, each one of them about 55 feet wide. In the middle of these halls, going across, is a driveway where the elevators from the railroad cars come down. Each of the casemates has an elevator large enough to hold one-sixth of a railroad car, so they have only to go up and down six times to get the stuff from a whole railroad car into the basement.

They have no delivery system because the market is in the center of the city, right where the old town is. The market is mostly retail; the wholesalers will be in the halls. They will be able to unload about 150 cars a day into the casemates, and one of the casemates is for auctions only.

For the general system of retail distribution throughout the city they have stores, just as we have here—retail stores, small stores, and, as everywhere where there are large cities, these stores were on the increase. Instead of becoming less they were becoming more, and that is the reason why the people in Frankfort-on-the-Main are going to build their new market, for which they have already appropriated the money, not in the center of the city, but on the outskirts, and they intend to have it so that only the retailers come there from the city to get the stuff at wholesale and

bring it back to the stores and then sell it to the neighborhood. They claim that they can make good on that because they will be able to deliver so much cheaper than at the present time; the retailers will be able to buy so much cheaper that they can sell also much cheaper.

In Hamburg the question was put to the farmers whether they wanted a covered market or an open market and the farmers voted nearly unanimously against the former for several reasons, chiefly because it would make the stands a little dearer, and they were afraid the stuff would spoil more easily. The wholesalers wanted a hall. In Hamburg they hold markets twice a day—once early in the morning and once in the afternoon. The afternoon market is more for the housewives. It does not seem to be growing more difficult for them to bring in goods by truck on the market wagons to these little towns like Hamburg or Munich, but in Berlin it is certainly difficult. Stuff comes to Hamburg by boat down the Elbe, which flows past great producing districts, the most fertile districts in Germany. They receive by wagon and boat 1,300 wagon loads a day. They have no other smaller markets in the outskirts of the city. The storekeepers drive up to the central market with their wagons early in the morning.

All the functions pertaining to the sale of food are under one bureau of the city management. I think it is the market police that take care of the food inspection and clean the markets. They issue licenses and collect rents.

I think they will open up a very large district in Germany by having this auction selling. Then the farmers can ship by rail directly to the city of Hamburg to the auctioneer, and he will take care of the goods. They tell me the main thing is for them to get as much stuff into the market from the farmers as possible, so as to prohibit the wholesalers from fixing their own prices. They tell me in Frankfurt, for instance, wholesalers always try to corner the market in some way, as, for instance, by telling the farmers there wasn't any market for potatoes when potatoes were very high. The auction system brings in more produce. The farmers know they will get their checks in a few days. They receive them in five days. They charge a commission of 5 per cent. for selling. The city takes that. The auction sales are conducted by city employees who are paid by the year.

XV. BIBLIOGRAPHY

Compiled by Charles C. Williamson, Ph. D., Chief of the Division of Economics and Sociology, New York Public Library

- I. Markets and marketing.
- II. Cost of living and food prices.
- III. Municipal slaughter houses and the meat supply.
- IV. Cold storage of food products.
- V. Transportation of food products.
- VI. The Distribution of Foodstuffs.
- VII. Coöperation, with special reference to the production and distribution of food products.

I. MARKETS AND MARKETING

ALVORD, HENRY E.

Cattle markets and abattoirs in Europe. 9 pl., 1 plan. (In: United States. Animal Industry Bureau. Annual report. [no.] 18. Washington, 1902. 8vo. p. 279-305.)

ANDREWS, FRANK.

Marketing grain and live stock in the Pacific coast region. Washington: Gov. Prtg. Off., 1911. 94 p. 8vo. (U. S. Statistics Bureau, Agriculture Dept. Bulletin 89.)

ANDREWS, FRANK.

Methods and cost of marketing. (In: United States. Agriculture Department. Yearbook. 1909. Washington, 1910. p. 161-172.)
Annals of the American Academy of Political and Social Science, July and November, 1913 (Philadelphia).
Architectural Handbook, Vol. III, Part 4, 2d ed. Darmstadt, 1891.

BAWDEN, J.

Distribution and sale of perishable crop products. (In: Bailey, L. H., *Cyclopedia of American Agriculture*. New York, 1909. v. 4. u. 245-247.)

BELL, SIR JAMES, and JAMES PATON.

Municipal Markets. (In their: *Glasgow; its municipal organization and administration*. Glasgow, 1896. 4to. p. 276-291.)

BLOCH, RICHARD.

Le marché européen des denrées périssables. (*Revue politique et parlementaire*. Paris, 1910. tome 63. p. 101-127.)

BOSTON. MARKET DEPARTMENT.

Annual report of superintendent. (In: Boston city council. *City Documents for the year, 1890— Boston, 1891—* 8vo.)

- BRADFORD'S Municipal Markets.** A new scheme of extensions. Picturesque group of buildings, to cost twenty thousand pounds. (Municipal Journal and London. London, 1899. folio. p. 853.)
- BROWN, EDWARD.**
The marketing of poultry. (Royal Agricultural Society of England. Journal. London, 1898. 8vo. series 3. v. 9. p. 270-286.)
- CARD, FRED W.**
Farm management, including business accounts, suggestions for watching markets, . . . etc. N. Y.: Doubleday, Page & Co., 1907. xiii, 270 p., 63 pl. 8vo. (The Farm Library.)
- CARTER, J. F.**
Public Markets in American Cities. (American City Magazine, February, 1913. New York.)
- CRISSEY, FORREST.**
Robbing the hand that feeds. (Everybody's Magazine. New York, 1909. v. 20. p. 761-771.)
- DE VOE, THOMAS F.**
The Market Book. New York, 1862.
- FETTER, FRANK A.**
The theory of the middleman. (In: Bailey, L. H., Cyclopedia of American Agriculture. New York, 1909. v. 4. p. 238-241.)
- GERHARD, WILLIAM PAUL.**
Sanitary features of markets and abattoirs. (Amer. Architect. v. 90, p. 187-188, 203-204; v. 91, p. 59-61, 85-87. New York, 1906-07.)
- GOSSNER, ERICH.**
Über die Entwicklung und heutige Organisation des Berliner Fischmarktes. 6 [2] 93 p. Staats-u. socialwiss. Forsch. v. 19, no. 5. Leipzig, 1901.
- GRAVESEND'S ancient market . . .** Description of the new market. Municipal Journal and London. London, 1899. folio. v. 8. p. 38.)
- GREAT BRITAIN.** Market rights and tolls, Royal commission on.
Reports as to foreign markets. London, 1891. 71 p. folio. In: Great Britain. Parliament. Sessional papers. 1890-91. v. 41.
- GREAT BRITAIN.** Market rights and tolls, Royal commission on.
Reports. London, 1889-91. 14 v. in 9. folio. In: Great Britain. Parliament. Sessional papers. 1881-91. v. 37-41, 53-55.
v. 1. First report . . . with the report . . . relating to the history of fairs and markets in the United Kingdom.
v. 2-4. Minutes of evidence. England.
v. 5-6. Minutes of evidence. Ulster, Leinster and Connaught.
v. 7-10. Minutes of evidence. England, Scotland and Ireland.
v. 11. Final report of the commissioners.
v. 12. Précis of minutes of evidence taken before the commissioners . . .
v. 13. Pt. 1. Statistics relating to markets in London, and also to markets owned by local authorities in England and Wales. . . .
v. 13. Pt. 2. Statistics relating to markets in England and Wales owned by persons other than local authorities.
v. 13. Pt. 3. Statistics relating to markets in Scotland and Ireland.
v. 14. Reports as to foreign markets.

HALLE, LEVY VON.

Die Organisation des Berliner Vieh—und Fleischmarktes. (Jahrbuch für Gesetzgebung, Verwaltung und Volkswirtschaft im Deutschen Reich. Leipzig, 1892. Jahrgang 16. Heft 2. p. 49-116.)

HARTMANN, JULIUS.

Die Tätigkeit der Gemeinde Wien auf dem Gebiete der Approvisionierung. (Ztschr. für Volkswirtschaft, Sozialpolitik und Verwaltung. Wien, 1909. 8vo. Bd. 18, p. 616-655.)

HENNICKE, Reports on Public Markets in Germany, England, France and Italy. Berlin, 1881.

HILL, GEORGE G.

Marketing farm produce. Washington: Gov. Prtg. Off., 1897. 27 p. illus. 8vo. (U. S. Agriculture Dept. Farmers' Bull. no. 62.)

HILSON, J. LINDSAY.

Scottish market customs. (Notes and Queries. London, 1909. 8vo. ser. 10, v. 12, p. 121-123.)

HOLMES, GEORGE K[IRBY].

Consumers' fancies. Washington, 1904. p. ii, 417-434. 8vo. Repr.: U. S. Agriculture Department. Yearbook. 1904.

HUTT, W. N.

Marketing fruit and truck crops. College Park, Md.: Agricultural Experiment Station, 1907. p. 211-257. illus. 8vo. (Maryland Agricultural Experiment Station. Bulletin No. 116.)

KIELY, P. M.

The middleman in practice. (In Bailey, L. H., Cyclopedia of American Agriculture. New York, 1909. v. 4. p. 241-243.)

Knowledge of Building for Architects, Vol. II, Part 1, Market-hallen. Berlin, 1897.

KÜSTER.

Die hygienische Bedeutung städtischer Markthallen, ihre Einrichtung und ihr Betrieb. [With discussion.] (Deut. Vierteljahrsschr. f. öffentl. Gesundheitspflege. Braunschweig, 1909. 8vo. v. 41, p. 122-150.)

KUESTER, HEINRICH.

Markthallen. (In: Prausnitz, W. Atlas und Lehrbuch der Hygiene mit besonderer Berücksichtigung der Städte-Hygiene. München, 1909. 4to. p. 664-683.)

LAMBERT, D. J.

Preparing and marketing poultry products, and the care of eggs. (In: Bailey, L. H. Cyclopedia of American Agriculture. New York, 1908. v. 3. p. 544-547.)

LANGE, EDGAR.

Die Versorgung der grosstädtischen Bevölkerung mit frischen Nahrungsmitteln unter besonderer Berücksichtigung des Marktwesens der Stadt Berlin. Eine wirtschaftswissenschaftliche Studie. Leipzig: Duncker & Humblot, 1911. viii, 83 p. 8vo. (Staats- und sozialwissenschaftliche Forschungen. Heft 157.) Bibliography, p. 83.

LARKIN, M. LIPPITT.

The butter market. (Jour. of political economy. Chicago, 1912. 8vo. v. 20. p. 267-275.)

LEICESTER's municipal markets. Wholesale market to be erected. . . . A profitable municipal asset. (Municipal Journal and London. London, 1899. folio. v. 8. p. 587.)

Lessons from Paris.—II. The municipal council of the French capital owns and manages nearly all the city's markets and slaughter houses. . . . (Municipal Journal. London, 1906. v. 15. no. 682. p. 199-200.)

LINDEMANN, A.

Die Markthallen Berlins: Ihre baulichen Anlagen und Betriebseinrichtungen. Im auftrage des Magistrats dargestellt. Berlin: J. Springer, 1899. 2 p. 1., 90 p., 1 l., 25 plans, 7 plates. folio. (Berlin, Magistrat.)

LINDEMANN, H[UGO].

Märkte und Markthallen. (In his: Die deutsche Städteverwaltung. . . . Stuttgart, 1906. 8vo. p. 133-149.)

LUECKER, HEINRICH.

Die Gemeindebetriebe in den Städten, Kreisen und Landgemeinden des Oberschlesischen Industriebezirks. Leipzig: Duncker & Humblot, 1910. vi p., 1 l., 82 p., 1 map. 8vo. (Verein für Socialpolitik. Schriften. Bd. 129. Teil 10.) p. 31-36 Märkte, Markthallen.

LUEGER, Encyclopedie of Technic, Vol. IV, 2d ed., 1908.

MADISON's municipal market. Enclosed market room, market master's room, waiting rooms. . . . (Municipal Journal, New York, 1911. v. 31, no. 7, p. 197-199.)

MALTBIE, MILO ROY.

Municipal functions: a study of the development, scope and tendency of municipal socialism. (Municipal Affairs. New York, 1898. v. 2. no. 4. p. 577-814. 8vo.) Markets and abattoirs. p. 716-722.

Markets, slaughter houses, and foreign animals, wharves belonging to the Corporation of Glasgow. (In Glasgow [city], Scotland. Handbook on the municipal enterprises. Glasgow, 1904. p. 130-135.)

Markets procedure. A valuable inquiry into market methods and practice of some of the largest English cities and towns. . . . (Municipal Journal. London, 1905. v. 14. no. 639. p. 425. no. 641. p. 491-492.)

DE MASSY, R.

Public Markets and Commerce. London and Paris.

MILLER, CYRUS C.

Municipal Market Policy, Published by the City Club of New York. 1912.

What the City Can Do to Reduce the Cost of Living. Address delivered at Conference of Mayors of the State of New York at Binghamton, N. Y. June 6, 1913. Wholesale Terminal Markets. (American City Magazine, April, 1913. New York.)

MOWRY, DON E.

Municipal markets: Boston, Baltimore, Chicago and New Orleans market buildings. . . . (Municipal Jour. and Engineer. v. 23, 462-464. New York, 1907.)

MOWRY, DON E.

Municipal markets: an economic necessity. 1 port. (Government. v. 2, p. 177-182. Boston, 1907.)

Municipal markets of St. Louis. illus. (Municipal Jour. and Engineer. New York, 1910. 4to. v. 28, p. 611-616.)

Municipalisation of Spitalfields Market. Should it be acquired by the London County Council? How a profitable bargain may be secured for the ratepayers. (Municipal Journal and London. London, 1899. folio. v. 8. p. 457.)

NEUE, Die, Grossmarkthalle in München. München, 1912. 6 l. 4vo. (Münchener Gemeinde-Zeitung. Amtliche Beilage zu Nr. 13.)

NEW YORK PUBLIC LIBRARY.

Check list of works relating to the streets, markets, real estate, public buildings, etc., of the City of New York in the New York Public Library. (New York Public Library. Astor, Lenox, and Tilden foundations. Bull. New York, 1900. 4vo. v. 5. p. 151-159.)

NORMAND, J.

Les halles centrales de Paris. (L'Economiste français. Paris, 1912. 4vo. Année 40 (1912, v. 1). p. 798-800.)

OLDYS, HENRY.

The game market of to-day. (In: United States. Agriculture Department. Yearbook. 1910. Washington, 1911. p. 243-254.)

OSTHOFF, GEORG.

Anlagen für die Versorgung der Städte mit Lebensmitteln. Markthallen, Schlachthöfe und Viehmärkte. Jena: G. Fischer, 1894. (In: Handbuch der Hygiene, hrsg. von T. Weyl. Jena, 1893. 8vo. Bd. 6, p. vi, 1-79.)

PAPERS relating to the Washington Market Company. [Presented by Mr. Dick and ordered to be printed, May 19, 1908.] (U. S. 60th Cong., 1st sess. Senate doc. no. 495.)

PENNINGTON, M. E.

Studies of poultry from the farm to the consumer. Washington: Govt. Prtg. Off., 1911. 42 p. Illus. 8vo. (U. S. Chemistry Bureau. Circular. No. 64.)

PHILIPS, A[LEN] G.

The marketing of eggs. Manhattan, Kan.: the station, 1909. 1 l. p. 243-258, 1 l. 8vo. (Kansas. Experiment station. Bulletin 162.)

PLUMB, CHARLES S.

Marketing live stock. Washington: Gov. Prtg. Off., 1903. 40 p. 8vo. (U. S. Agriculture Dept. Farmers' Bull. No. 184.)

QUASI-PUBLIC MARKETS IN NEW ORLEANS.

(Municipal Journal and Engineer. New York, 1909. v. 26. no. 12. p. 490.)

RAPPORT adressé au Président de la République par la commission supérieure des Halles Centrales de Paris sur la situation des halles pendant l'année 1901. Ministère de l'agric. Annales, Année, 21, p. 73-81. Paris, 1902.

RIETSCHEL, SIEGFRIED.

Markt und Stadt in ihrem rechtlichen Verhältnis. Ein Beitrag zur Geschichte der deutschen Stadtverfassung. Leipzig: Veit & Co., 1897. viii, 233 p. 8vo.

ROCHESTER'S public market. (Municipal Journal and Engineer. New York, 1908. v. 24. no. 14. p. 385-389.)

ROSSIE, C. SMITH.

Cheap meat: the German "Freibank." (Contemporary Review. London, 1910. v. 98. p. 661-669.)

SANITARY, The, features of markets and abattoirs. (American Architect. New York, 1907. v. 91. no. 1623. p. 59-61. no. 1626. p. 85-87.)

SCANDAL, The, of London's markets. London: The Fabian Society [189-?]. 3 p. 8vo. (Fabian tracts. no. 6.)

SHAW, S. B.

The preparation of fruit and vegetables for market. Raleigh, 1909. 38 p. illus. 8vo. (North Carolina. Agriculture Department. v. 30. no. 5.)

SCHILLING, B.

Die neue Hauptmarkthalle in Köln. (Germany. Ministerium der öffentlichen Arbeiten. Zeitschrift für Bauwesen. Berlin, 1906. folio. Jahrgang 56. col. 209-252. [22 p.]

SCHWARZ, KARL.

Der Wiener Zentralviehmarkt St. Marx, seine Bedeutung für den Viehhandel und seine volkswirtschaftliche Funktion. (In: Verein für Socialpolitik. Schriften. Bd. 130. Teil 1. p. 23-93.)

SLOCUM, ROB R.

Marketing eggs through the creamery. Washington: Govt. Prtg. Off., 1911. 12 p. 8vo. (U. S. Agriculture Dept. Farmers' Bull. [no.] 445.)

SMITH, HUGH M.

A North Holland cheese market. (National Geographic Magazine. Washington, 1910. v. 21. p. 1051-1066.)

SPECK, BERNHARD.

Die Approvisionierung Wiens mit Fleisch. (Zeitschrift für Volkswirtschaft, Sozialpolitik und Verwaltung. Wien, 1904. 4vo. Bd. 13. p. 65-97.)

STONEBURN, F. H.

The marketing of poultry products. Storrs, 1906. 28 p. illus. 8vo. (Connecticut. Storrs Agricultural Experiment Station. Bull. 38.)

STRACH, GEORG.

Zum Markthallenbau in Posen. (Stadtebau. Berlin, 1909. folio. Jahrgang 6. p. 116-118.)

SULLIVAN, J. W.

"Markets for the People." New York. Macmillan Co. 1913.

SYMPOSIUM, A.—The markets of some great cities. [Boston, Baltimore, Chicago, San Francisco.] (Chautauquan. Meadville, 1897. v. 24. p. 332-335.)

UNITED STATES. Industrial Commission.

Distribution of farm products in city markets. (In: Report of the Industrial Commission. 1901. v. 6. p. 337-379.)

UNITED STATES. Industrial Commission.

Report . . . on the distribution of farm products. Washington: Gov. Prtg. Off., 1901. 508 p., 2 diagr., 5 maps. 8vo. (56th Cong., 2nd sess. H. doc. 494.) v. 6 of Commission's reports.

UNITED STATES. Industrial Commission.

Testimony as to middle-men. (In: Report of the Industrial Commission . . . 1901. v. 10. p. 132-138; 152-163; 170-193; 220-227; 243-255; 255-273; 480-485; 591-604. Digest of testimony. p. ccxcii-ccxciii.)

UNITED STATES. Interstate and Foreign Commerce Committee (House).

Hearings before the Committee on Interstate and Foreign Commerce of the House of Representatives. H. R. 19,069 and H. R. 19,132, to establish in the Department of Commerce and Labor a bureau of markets. Feb. 6, 1912. Washington: Govt. Prtg. Off., 1912. 20 p. 8vo.

UNITED STATES. Manufactures Bureau.

Municipal markets and slaughterhouses in Europe. Washington: Gov. Prtg. Off., 1910. 117 p. pap. 8vo. (Special consular reports. v. 42, part 3.)

VALLIN, E.

Hygiène comparative des marchés couverts et des marchés volants. (Rev. d'hygiène et de police sanitaire. v. 22. p. 482-492. Paris, 1900.)

VAN VORST, MRS. JOHN.

The markets of Paris. (Lippincott's Monthly Magazine. Philadelphia, 1910. v. 86. no. 511. p. 90-95.)

WASHINGTON market, Newark, N. J. illus. (Municipal Jour. & Engineer. New York, 1910. 4vo. v. 28. p. 759-761.)

WASHINGTON's municipal markets. (Municipal Journal and Engineer. New York, 1910. v. 29. no. 3. p. 81-83.)

WHITE, CHARLES HENRY.

The Fulton Street Market. (Harper's Magazine. New York, 1905. v. 111. p. 616-623.)

WISCONSIN State Board of Public Affairs. Report upon Coöperation and Marketing. Madison, Wis., 1912.

II. COST OF LIVING AND FOOD PRICES

BIBLIOGRAPHY

LIST (A) of works in the New York Public Library relating to prices. Bull. N. Y. Pub. Lib. v. 6. p. 115-159.

MEYER, HERMANN HENRY BERNARD.

Select list of references on the cost of living and prices. Washington: Gov. Prtg. Off., 1910. v. 107 p. 4vo. (United States. Library of Congress.)

ROYAL STATISTICAL SOCIETY.

Bibliography of the prices of cereals. Presented by the R. S. S. to the International Statistical Institute at the Copenhagen Congress, August, 1907. (Royal Statistical Society. Journal. London, 1908. 8vo. v. 71. p. 178-206.)

GENERAL

ANNALS of the American Academy of Political and Social Science. "The Cost of Living." July, 1913. Philadelphia.

BRUNEAU, L.

La cherté de la viande et ses causes. (Grande rev. Paris, 1911. 8vo. année 15. v. 69. p. 598-608, 801-813.)

CHAPIN, ROBERT COIT.

The influence of income on standards of life. (Amer. Econ. Assoc. Quar. Papers and Discussions of the 21st annual meeting. Princeton, N. J., 1909. 8vo. ser. 3. v. 10. no. 1. p. 180-192.)

CHAPIN, ROBERT COIT.

The standard of living among workingmen's families in New York City. New York: Charities Publication Committee, 1909. xv. 372 p. 8vo. (Russell Sage Foundation.)

CROWELL, JOHN FRANKLIN.

Speculation and farm prices. (In: Bailey, L. H. Cyclopedia of American Agriculture. New York, 1909. v. 4. p. 243-245.)

DULAC, ALBERT.

La formation des prix des denrées alimentaires de première nécessité. Paris: M. Rivière et Cie., 1911. 2. p. 1. 158 p. 12vo. (Bibliothèque des sciences économiques & sociales.)

FÖLDES, BELA.

Die Getreidepreise im 19. Jahrhundert. (Jahrb. f. Nationalökonomie u. Statistik. ser. 3. v. 29. p. 467-518. Jena, 1905.)

JONES, EDWARD D.

The causes of the increased cost of agricultural staples and the influence of this upon the recent evolution of other objects of expenditure. (Michigan Academy of Science. Report. Lansing, Mich., 1910. 8vo. Report no. 12, 1910. p. 137-142.)

LAYTON, W. T.

Wheat prices and the world's production. (Royal Agricultural Society of England. Journal. London, 1909. 8vo. v. 70. p. 99-110.)

LEVASSEUR, EMILE.

Enquête sur le prix des denrées alimentaires depuis un quart de siècle dans soixante-dix lycées. illus. (Soc. de statist. de Paris. Jour. v. 50. p. 314-349. Paris, 1909.)

LEVASSEUR, EMILE.

Le prix du blé dans divers pays au xix siècle. Institut internat. de statist. Bull. v. 18. no. 2. p. 111-118. LeHaye, 1910.

MAGEE, J. D.

Food prices and the cost of living. (Jour. of Polit. Econ. Chicago, 1910. 8vo. v. 18. p. 294-308.)

S, A. P.

Enquête sur la cherté de la vie. Les prix des denrées alimentaires depuis 25 ans. (Grande rev. Paris, 1909. 8vo. v. 58. p. 363-368.)

SAUERBECK, AUGUSTUS.

Prices of commodities, 1867 to date. (Roy. Statist. Soc. Jour. London, 1886 to date. 8vo. v. 49. p. 581-648.) (Continued yearly to date.)

STREIGHTOFF, FRANK HATCH.

The standard of living among the industrial people of America. Boston: Houghton Mifflin Company, 1911. xix. 196 p. 1 l. 8vo. (Hart, Schaffner & Marx prize essays. [v.] 8.)

UNDERHILL, FRANK P.

The cost of adequate nutrition. (Yale Rev. New Haven, 1911. 8vo. v. 1. p. 261-273.)

ZOLLA, D.

La hausse des prix et le développement de la production agricole. (Rev. polit. et parlementaire. Paris, 1912. 8vo. tome 71. p. 77-99.)

UNITED STATES

HALSTEAD, MARSHAL.

Wages and cost of living in Great Britain and the United States. (Monthly Consular Repts. no. 290. Nov., 1904. p. 44-49.)

HANGER, G. W. W.

Cost of living and retail prices in the United States. 14 pl. (Bull. of the Bureau of Labor. v. 9. p. 1129-1164. Washington, 1904.)

McCUMBER, PORTER J.

Prices of farm products. (United States. Congressional Record. Washington, 1910. 4vo. v. 45. p. 1479-1483.)

MASSACHUSETTS. Cost of Living Commission.

Report of the commission . . . May, 1910. Boston: Wright & Potter Ptg. Co., 1910. 752 p. 12 charts. clo. 8vo. (House. No. 1750.)

MOVEMENT of prices, 1840-1899, from Sauerbeck's tables. London Economist, and reports of U. S. Senate and the Department of Labor on prices. (Monthly Summary of Commerce and Finance of the U. S. ser. 1899-1900. no. 11. p. 3129-3146. Washington, 1900.)

REPORT of British Board of Trade on cost of living in the principal industrial cities of the United States. (U. S. Dept. of Commerce and Labor. Bureau of Labor. Bull. Washington, 1911. 8vo. 1911. p. 500-570.)

RETAIL prices of food, 1890 to 1904. (Bull. Bureau of Labor. July, 1905. p. 148-301. Washington, 1905.)

RETAIL prices of food, 1890 to 1905. (Bull. Bureau of Labor. July, 1906. p. 171-316. Washington, 1906.)

RETAIL prices of food, 1890-1907. (U. S. Dept. Commerce and Labor. Bureau of Labor Bull. Washington, 1908. 8vo. no. 77. (July, 1908.) p. 181-332.)

TAYLOR, H. C.

The price of farm products. Madison: the University, 1911. 30 p. illus. 8vo. (Wisconsin University. Agricultural Experiment Station. Bulletin no. 209.)

UNITED STATES. Agriculture Department.

Prices of farm products. . . . Letter from the Secretary of Agriculture, transmitting a series of tables showing the average price on Dec. 1 of each year from 1900 to 1909, inclusive, of important crops; and the averages of the monthly range of prices of important crops in certain cities from 1900 to 1909. [Washington: Gov. Prtg. Off., 1910.] 9 p. 8vo. (U. S. 61st cong. 2nd sess. Sen. doc. v. 46. no. 498.)

UNITED STATES. Agriculture Department.

Prices of farm products (In: Yearbook of the Department of Agriculture. 1910. p. 19-26.)

UNITED STATES. Agriculture Department.

Wages and prices of commodities. [Washington: Gov. Prtg. Off., 1910.] 14 p. 8vo. (U. S. 61st cong. 2nd sess. Sen. doc. no. 601. v. 46.)

UNITED STATES. Commerce and Labor Department.

Increase in cost of food and other products. Letter from the Secretary of Commerce and Labor, transmitting . . . information. . . . [Washington: Gov. Prtg. Off., 1910.] 19 p. 8vo. (U. S. 61st cong. 2nd sess. Sen. doc. v. 46. no. 349.)

UNITED STATES. Commerce and Labor Department.

Retail prices of food in the United States, 1900 to 1907. Wholesale prices of commodities in the United States, 1900 to 1908. Wages and hours of labor in manufacturing industries in the United States, 1900 to 1907. . . . Washington: Gov. Prtg. Off., 1910. 34 p. 8vo. (U. S. 61st cong. 2nd sess. Sen. doc. v. 46. no. 436.)

UNITED STATES. Labor Bureau.

Wages and prices of commodities. . . . Report of the U. S. Bureau of Labor, giving the monthly prices of commodities from Jan., 1909, to March, 1910. [Washington: Gov. Prtg. Off., 1910.] 26 p. 8vo. (U. S. 61st cong. 2nd sess. Sen. doc. v. 46. no. 549.)

UNITED STATES. Navy Department.

Prices of commodities in the Navy. . . . Letter from the Secretary of the Navy, transmitting a statement giving the prices paid by vessels of the United States Navy for all kinds of subsistence supplies purchased at foreign ports during the calendar years 1900 to 1909, inclusive. [Washington: Gov. Prtg. Off., 1910.] 17 p. 8vo. (U. S. 61st cong. 2nd sess. Sen. doc. v. 46. no. 488.)

UNITED STATES. Wages and Prices of Commodities, Committee on.

Prices of food products. Comparison of prices . . . in Detroit, Mich., and Windsor, Ontario, taken from the advertisement in the Evening Record, of Windsor, and the Detroit News for Feb. 25, 1910. [Washington: Gov. Prtg. Off., 1910.] 1 p. 2 fac-sim. 8vo. (U. S. 61st cong. 2nd sess. Sen. doc. v. 46. no. 437.)

UNITED STATES. Wages and Prices of Commodities, Select Committee on.

Report . . . pt. 1-2. Washington: Gov. Prtg. Off., 1910. 8vo. (61st cong. 2nd sess. Senate Report 912. pt. 1-2.) pt. 1, Lodge report on cost of living. pt. 2, Johnston report on cost of living.

UNITED STATES. Wages and Prices of Commodities, Select Committee on (Senate).

Investigation relative to wages and prices of commodities. Topical digest of evidence submitted in hearings . . . relative to wages and prices of commodities. Washington: Govt. Prtg. Off., 1910. xcv p. pap. 8vo.

UNITED STATES. Wages and Prices of Commodities, Select Committee to Investigate. Investigation relative to wages and prices of commodities. Hearings held before the select committee of the Senate, relative to wages and prices of commodities. Washington: Gov. Prtg. Off., 1910. 2 v. in 1. 8vo. v. 1-2 continuously paged. 875 p.

WADLIN, HORACE G.

Graded prices. Boston: Wright & Potter, state prtrs., 1901. viii p. (1) 251-792. pap. 8vo. (Mass. Labor Statistics Bureau.) From the 31st annual report of the Mass. Bureau of Stats. of Labor.

WHOLESALE prices, 1890-1910. (U. S. Dept. of Commerce and Labor. Bureau of Labor Bull. Washington, 1910-11. 8vo. 1910, p. 377-582; 1911, p. 309-499.)

WILLSON, WALLACE CAUSE.

. . . Weekly prices of butter on the Elgin board of trade, from 1880 to 1911, inclusive, with monthly and yearly averages. Butter and egg prices, New York, Chicago, Boston, and Philadelphia, with other statistical information. . . . Comp. by W. C. Willson. . . . Elgin, Ill., c. 1912.

YOAKUM, B. F.

"The High Cost of Living." *World's Work*. Sept., 1912.

CANADA

COATS, R[OBERT] H[AMILTON].

Wholesale prices in Canada, 1890-1909 (inclusive). Special report. Ottawa: Gov. Prtg. Bur., 1910. xiii, 509 p., 114 charts. pap. 8vo. (Canada (Dom.) Labour Department.)

McILWRAITH, JEAN N.

Household budgets abroad. Canada. (*Cornhill Maga.* v. 17. p. 606-821.)

UNITED STATES. Wages and Prices of Commodities, Committee on.

Cost of living in Canada. . . . Letter from the Consul-General at Ottawa, Can., in response to instructions . . . asking him to forward such data as he might be able to obtain in regard to the cost of living in Canada. [Washington: Gov. Prtg. Off., 1910.] 96 p. 8vo. (U. S. 61st cong. 2nd sess. Sen. doc. v. 46. no. 409.)

FRANCE

MARCH, LUCIEN.

Influence des variations des prix sur le mouvement des dépenses ménagères à Paris. 3 illus. Soc. de statist. de Paris. Jour. v. 51. p. 136-165. Paris, 1910.

LEVASSEUR, EMILE.

Enquête sur le prix des denrées alimentaires en France. 1 illus. (Institut. de France. Acad. d. sci. mor. et polit. Séances et travaux, n. s. v. 72. p. 161-212. Paris, 1909.)

GREAT BRITAIN. Trade, Board of.

Cost of living in French towns. Report of an enquiry . . . into working¹ class rents, housing, and retail prices, together with rates of wages in certain occupations in the principal industrial towns of France. London: Darling & Son, ltd., 1909. liv, 430 p. pap. folio.

BEAURIEUX, NOËL.

Les prix du blé en France au xixe siècle. (Histoire et statistique.) Paris: E. Larose, 1909. 2 p. 1, 108 p., 1 l. 4to. (Université de Paris. Faculté de droit.)

GERMANY

COST of living of families of moderate income in Germany in 1907-08. (U. S. Dept. of Commerce and Labor. Bureau of Labor Bull. Washington, 1910. 8vo. 1910, p. 697-794.)

GERLICH, HEINRICH.

Die Preisbildung und Preisentwicklung für Vieh und Fleisch am Berliner Markte (für Schweine). Leipzig: Duncker & Humblot, 1911. 4 p. 1, (1) 6-159 (1) p., 2 diag. 8vo. (Verein für Sozialpolitik. Schriften. Bd. 139, Teil 1.)

GREAT BRITAIN. Trade, Board of.

Cost of living in German towns. Report of an enquiry by the Board . . . into working class rents, housing, and retail prices, together with the rates of wages in certain occupations in the principal industrial towns of the German Empire. With an introductory memorandum and a comparison of conditions. . . . London: Darling & Son, 1908. lxi, 548 p., 1 map. pap. folio. (Cd. 4032.)

GSCHWENDTNER, KARL.

Die Entwicklung der Münchener Fleischpreise seit Beginn des 19. Jahrhunderts und ihre Ursachen. Diessen: J. C. Huber, 1911. 76 p., 1 diagr. 8vo.

PRUSSIA. Statistisches Bureau.

Monats. und Jahrespreise wichtiger Verpflegungsmittel in 154 preussischen Berichtsorten im Jahre 1909. Berlin: Verlag des königlichen Statistischen Landesamts, 1910. 2 p. 1. xv, 196 p. half leath. folio. (Preussische Statistik. Heft 222.)

WIRKLICHE und Mittelpreise der wichtigsten Lebensmittel für Menschen und Thiere in den bedeutendsten Marktorten der preussischen Monarchie während des Kalenderjahr, 1869. (Kön. preuss. statist. Bureaus. Jahrg. 10, p. 85-87.) [Cont. to date, for pages see index of vols.]

WYGODZINSKI, W.

Zur Frage der Viehpreise. (Jahrb. f. Gesetzgeb., Verwaltung u. Volkswirtschaft im Deut. Reich. Jahrg. 30, Heft 3, p. 183-196. Leipzig, 1906.)

GREAT BRITAIN**UNITED STATES. Wages and Prices of Commodities, Committee on.**

Labor conditions and cost of living. . . . Report on British labor conditions and the cost of living as found in the wage scales secured from union organizations; also a statement of rates of wages and cost of living in Nova Scotia. [Washington: Gov. Prtg. Off., 1910.]. 7 p. 8vo. (U. S. 61st cong. 2nd sess. Sen. doc. v. 46. no. 465.)

TYSZKA, CARL VON.

Die Bewegung der Preise einiger wichtiger Lebensmittel insonderheit der Fleischpreise in Deutschland und im Auslande, unter besonderer Berücksichtigung Englands. (Jahrb. für Nationalökonomie und Statistik. Jena, 1911. 8vo. F. 3. Bd. 42. p. 632-665.)

MAHIN, FRANK W., AND ALBERT HALSTEAD.

Meat prices in England. Nottingham [and] Birmingham. (U. S. Manufactures Bureau. Weekly consular and trade reports. Washington, 1910. 8vo. v. 1. no. 2. p. 52-55.)

IRELAND. Agriculture and Technical Instruction Department.

Agricultural prices. A return showing . . . (1) the annual average prices for each year, 1881-1909; the annual average prices for each period comprised in the period 1881 to 1909 of 5 years, 10 years, 15 years, 20 years, and 25 years, and for the period of 4 years, 1906 to 1909. . . Dublin: Alexander Thom & Co., Ltd., 1911. 6 p. folio. (H. of C. pap. 93.)

GREAT BRITAIN. Trade Board.

Cost of living of the working classes. Report of an enquiry . . . into working class rents, housing, and retail prices, together with the standard rates of wages prevailing in certain occupations in the principal industrial towns of the United Kingdom. . . London: Darling & Son, 1908. liii, 616 p., 2 maps. pap. folio. (Cd. 3864.)

GREAT BRITAIN. House of Commons.

Wages and prices of commodities. . . Abstract from the proceedings of the House of Commons, April 12, 1910, relative to the "combines investigation act." [Washington: Gov. Prtg. Off., 1910.] 45 p. 8vo. (U. S. 61st cong. 2nd sess. Sen. doc. v. 46. no. 537.)

OTHER COUNTRIES

GREAT BRITAIN. Trade Board.

Cost of living in Belgian towns. Report of an inquiry . . . into working class rents, housing, and retail prices, together with the rates and wages in certain occupations in the principal industrial towns of Belgium. . . London: Darling & Son, Ltd., 1910. xli, 218 p., 1 map. pap. folio.

PRICES of wheat, bread, etc., in Milan, Italy, 1801 to 1908. (U. S. Dept. of Commerce and Labor. Bureau of Labor Bull. Washington, 1910. 8vo. 1910. p. 599-607.)

UNITED STATES. Wages and Prices of Commodities, Committee on.

Wages and prices of commodities. Digest of recent statistical publications relative to prices and wages and hours of labor in Austria, Belgium, Bulgaria, Finland, France, Italy, Norway, Sweden, and the United Kingdom. Washington: Gov. Prtg. Off., 1910. 135 p. 8vo. (U. S. 61st cong. 2nd sess. Sen. doc. v. 46. no. 631.)

ZUPPINGER, C.

Mitteilungen über die Preise der wichtigsten Lebensmittel und anderer Bedarfartikel im Januar, 1909. (Ztschr. f. schweizer. Statist. Bern, 1909. folio. Jahrg. 45. (1909, v. 4.) p. 634-640.)

III. MUNICIPAL SLAUGHTERHOUSES AND THE MEAT SUPPLY

AYLING, R. STEPHEN.

Public abattoirs; their planning, design, and equipment. London: E. & F. N. Spon, Ltd., 1908. viii, 88 p., 23 plans, 10 pl. 4to.

AYLING, R. STEPHEN.

Public abattoirs. illus. (Royal Institute of British Architects. Journal. London, 1909. 4vo. Series 3. v. 16. p. 189-213.)

BERICHT über den städtischen Vieh—und Schlachthof, über die städtische Fleischbeschau sowie über die Fleischvernichtungs—und Verwertungsanstalt bei Rüdnitz. (In: Berlin, Germany. Verwaltungsbericht des Magistrats zu Berlin für. . . 1910. Berlin, 1912. folio. no. 41.)

BRANDT, PAUL.

Die Fleischversorgung von Karlsruhe, Mannheim und Ludwigshafen a. Rh. Karlsruhe: G. Braun, 1908. 4 p. 1., 141 p. 8vo. (Volkswirtschaftl. Abhd. d. Badischen Hochschulen. Bd. 9, Heft 6.)

BRESLAU.

Schlachthof und Viehmarkt zu Breslau. Herausgegeben vom Magistrat der Königl. Haupt- und Residenzstadt Breslau. Breslau: J. U. Kern, 1900. 80 p., 45 plans. illus. folio.

BROOKS, ROBERT C.

A German solution of the slaughterhouse problem. (Yale Review. New Haven, 1907. 8vo. v. 15. p. 369-390.)

DITTMAR, FREDERICK.

Public slaughterhouses (Scotland). Report on the conditions prevailing in Scotland in respect of the provision of public slaughterhouses by local authorities, and as to the methods of meat inspection conducted by various local authorities, with suggestions for improvement. Glasgow: J. Hedderwick & Sons, Ltd., 1908. 82 p. folio.

DOHMANN, MR.

Appropriate refrigeration plants in modern slaughterhouses. (In: International Congress of Refrigeration, 2nd Vienna, 1910. Reports and proceedings, English edition. Vienna, 1911. 8vo. p. 490-494.)

DURAND, EDWARD DANA.

The beef industry and the government investigation. New York, 1905. 16 p. 8vo. Repr.: American Monthly Review of Reviews. April, 1905.

EDELMANN, R.

Schlacht- und Viehhöfe. (In: Prausnitz, W. Atlas und Lehrbuch der Hygiene mit besonderer Berücksichtigung der Stadt-Hygiene. München, 1909. 4vo. p. 639-663.)

EHRLER, JOSEPH.

Gemeindeschlaechtereien. (Verein für Socialpolitik. Schriften. Leipzig, 1908. Bd. 1281. p. 245-264.)

FARRINGTON, A. M.

The need of state and municipal meat inspection to supplement federal inspection. illus. (U. S. Animal Industry Bureau. Annual report. 25. 1908. Washington, 1910. p. 83-96.)

GAFFNEY, T. ST. JOHN.

Municipal slaughterhouse in Dresden. (U. S. Manufactures Bureau. Daily consular and trade reports. Washington, 1911. 8vo. Year 14. no. 141. p. 1231.)

GERMANY. Gesundheitsamt.

Die Ergebnisse der Schlachtvieh und Fleischbeschau im Deutschen Reiche im Jahre, 1904. Bearbeitet im Kaiserlichen Gesundheitsamte. Berlin: J. Springer, 1906. 2 p. 1., 135 (1) p. folio.

GERMANY. Statutes.

German meat regulations. With original text. Washington: Gov. Prtg. Off., 1903. 51 p. 8vo. (United States. Animal Industry Bureau. Bulletin no. 50.)

GREAT BRITAIN. Combinations in the Meat Trade Committee.

Minutes of evidence taken before the . . . committee . . . with appendices and index to the evidence. London: Jas. Truscott & Son, Ltd., 1909. iv, 345 p. folio. (Cd. 4661.)

GREINER, WILHELM.

Die Schlachthofanlagen und ihre maschinellen Einrichtungen. Hannover, 1909. 95 (1) p., 8 pl. illus. 12vo. (Bibliothek der gesamten Technik. Band 120.)

HALL, LOUIS D.

Market classes and grades of meat. Urbana, 1910. 1 pl. 147-290 p. illus. 8vo. (Illinois. Agricultural Experiment Station. Bull. 147.)

HEISS, HUGO.

The German abattoir. illus. (In: Cash, C. Our slaughterhouse system. . . . London, 1907. 8vo. p. 85-212.)

[HIRSCHAUER, HERMANN.]

The dark side of the beef trust. A treatise concerning the "canner" cow, the cold storage fowl, the diseased meats, the dopes and preservatives; and what takes place on the other side of the partitions of the packing houses while the public is being entertained by tinsel and music and a parade of prize steers for government inspection. [Jamestown: T. Z. Root], 1905. 160 p. 12mo.

HOLMES, GEORGE K[IRBY].

Meat supply and surplus, with consideration of consumption and exports. Washington: Gov. Prtg. Off., 1907. vi, 100 p. 8vo. (U. S. Statistics Bureau, Agriculture Dept. Bull. no. 55.)

LOVERDO, J. DE.

L'abattoir moderne de Soissons. illus. (Technique sanitaire. Paris, 1910. folio. Année 5. p. 73-83.)

LOVERDO, J. DE.

Les abattoirs publics. v. 1. Paris: H. Dunod et E. Pinat, 1906. 1 v. illus. 4vo. v. 1. Construction et agencement des abattoirs Dispositions générales. Construction. Agencement. Frigorifique. Industries annexes. Abattoirs étrangers.

McCABE, GEORGE P.

The new meat-inspection law and its bearing upon the production and handling of meats. Washington: Gov. Prtg. Off., 1907. 16 p. 8vo. (United States. Animal Industry Bureau. Circular no. 101.)

MAHIN, FRANK M.

Municipal abattoir in Amsterdam. (U. S. Manufactures Bureau. Daily consular and trade reports. Washington, 1911. 8vo. Year 14. no. 99. p. 424-425.)

MARTEL, H., AND OTHERS.

Les abattoirs publics, par H. Martel, J. De Loverdo [and] Mallet. 2vo. Paris: H. Dunod et E. Pinat, 1906. 1 vo. pl. 4to.
v. 2. Inspection et administration des abattoirs; installation des marchés aux bestiaux.

MARTEL, H.

Les abattoirs publics en France. Leur installation au point vue de l'hygiène publique et de la salubrité. (Revue scientifique. Paris, 1908. 4to. Série 5. Tome 10. p. 13-16.)

MARTEL, H.

Les abattoirs publics modernes. Ce qu'ils doivent être pour satisfaire aux exigences de l'hygiène et des services d'inspection. (Revue scientifique. Paris, 1908. 4to. Série 5. Tome 10. p. 137-141.)

MAYNER, WILLIAM.

Model municipal slaughtering establishment at Berlin. A lesson in sanitary meat dressing. illus. (Scientific American. New York, 1906. folio. v. 95. p. 68-69.)

MELVIN, A. D.

The federal meat-inspection service. Washington: Gov. Prtg. Off., 1908. 40 p., 15 pl. 8vo. (United States. Animal Industry Bureau. Circular 125.)
Repr.: U. S. Animal Industry Bur. Annual report 23.

MELVIN, A. D.

State and municipal meat-inspection and municipal slaughterhouses. Washington: Gov. Prtg. Off., 1912. 1 l., p. 241-254, 1 plan. 8vo. (U. S. Animal Industry Bureau. Circular 185.)

Repr.: U. S. Animal Industry Bur. Ann. report 27.

MOREAU, A.

L'abattoir moderne, construction, installation, administration. Préface de M. Leclerc. . . . Paris: Asselin et Houzeau, 1906. xvi, 477 p., 1 l. illus. 8vo.

MORITZ, F.

Der Staedische Schlachthof in Guben. illus. (Zeitschrift für Architektur und Ingenieurwesen. Wiesbaden, 1907. folio. Bd. 53. p. 22-38.)

MORITZ, F.

Der städtische Schlachthof und Viehmarkt. illus. (In: Posen, Prussia. Die Residenzstadt, Posen, und ihre Verwaltung im Jahre, 1911. [Posen, 1911.] 4to. p. 174-189.)

NATIONAL (THE) PROVISIONER, the organ of the provision and meat industries of the United States. Published weekly. 18—date. July, 1895—date. New York: The National Provisioner Publishing Co. 4to.

NEW SOUTH WALES. Public Works Department.

Report upon public abattoirs. [Sydney: W. A. Gullick, 1901.] 28 p., 14 plans, 3 pl. folio.

NOUVEAUX, LES, abattoirs municipaux de Dresde. illus. (Technique sanitaire. Paris, 1911. folio. Année 6. p. 284-294.)

PARKS, G. H.

The sanitary construction and equipment of abattoirs and packing houses. (United States. Animal Industry Bureau. Annual report [no.] 26. Washington, 1911. 8vo. 247-263.)

PENNINGTON, M. E., AND OTHERS.

The comparative rate of decomposition in drawn and undrawn market poultry. By M. E. Pennington, with the collaboration of E. Witmer and H. C. Pierce. Washington: Gov. Prtg. Off., 1911. 22 p. 8vo. (United States. Chemistry Bureau. Circular no. 70.)

PFISTER, O., AND G. KORRODI.

Der Zentralschlachthof. (In: Zürich (city), Switzerland. Die Gesundheits- und Wohlfahrtspflege der Stadt Zürich. Zürich, 1909. 8vo. p. 177-194.)

PFLUEGER, PAUL, AND JOH. HUEPPY.

Handbuch des schweizerischen Gemeindesozialismus. Zürich: Buchhandlung des Schweizerischen Grütlivereins, 1910. 267 p., 2 pl. illus. 8vo. p. 130-132. Schlachthäuser.

ROBERTSON, W[ILLIAM].

Meat and food inspection, by W. Robertson. With regulations governing meat inspection in the United States by Maximilian Herzog. Chicago: W. T. Keener & Company, 1908. x, 372, 16 p. illus. 8vo.

ROMMEL, GEORGE M.

The hog industry. Selection, feeding, and management. Recent American experimental work. Statistics of production and trade. Washington: Gov. Prtg. Off., 1904. 298 p., 3 maps. 8vo. (United States. Animal Industry Bureau. Bulletin no. 47.)

ROTHE, A.

Das deutsche Fleischergewerbe. Jena: G. Fischer, 1902. 3 pl., 216 p. 8vo. (Staatswiss. Seminar zu Halle a. d. S. Abhandl. Bd. 32.)

SCHLACHTHOF. (In: Dessau, Germany. Bericht über die Verwaltung und den Stand der Gemeindeangelegenheiten der Haupt- und Residenzstadt Dessau für 1. Juli, 1909, bis 30. Juni, 1910. Dessau [1911]. 8vo. p. 43-54.)

STAEDTISCHER Vieh- und Schlachthof. (In: Leipzig, Germany, Rath. Verwaltungsbericht des Rates der Stadt Leipzig für das Jahr, 1908. Leipzig, 1909. 4to. p. 345-385.)

STAUF.

Die Entwicklung des städtischen Schlacht- und Viehhofes. (In: Posen, Prussia. Die Residenzstadt, Posen, und ihre Verwaltung im Jahre, 1911. [Posen, 1911.] 4to. p. 190-196.)

TISSOT, ED.

Les nouveaux abattoirs de la Chaux-de-Fonds. Notice précédée de quelques considérations générales sur les abattoirs suisses. illus. (Technique sanitaire. Paris, 1908. folio. Année 3. p. 49-62, 77-87.)

UNITED STATES. Corporations, Commissioner of.

Report on the beef industry. Washington: Gov. Prtg. Off., 1905. xxxvi, 315 p. 8vo.

UNITED STATES. Manufactures Bureau.

Municipal markets and slaughterhouses in Europe. Washington: Gov. Prtg. Off., 1910. 117 p. pap. 8vo. (Special consular reports. v. 42. part 3.)

WALKER, FRANCIS.

The "Beef Trust" and the United States Government. (British Economic Association. Economic Journal. London, 1906. 4to. v. 16. p. 491-514.)

ZURHORST, A.

Beiträge zur grossstädtischen Fleischversorgungsfrage. (Archiv. für Städtekunde. Stuttgart, 1906. Jahrgang. 1. p. 10-38.)

IV. COLD STORAGE OF FOOD PRODUCTS

AHLBERG, MAX.

Volkswirtschaft und Gesetzgebung. (Congrès international du froid. I. Rapports et communications. Paris [1909]. Tome 3. 4to. p. 783-828.)

BRYCE, P.

The science of the preservation of foods by cold. (Sanitary Institute. Journal. London, 1910. 4to. v. 30. p. 20-31.)

BÜTZLER, DR.

Changes in the Physical and Morphological Conditions of Foodstuffs (Meat, Fish, and Milk) by Cold. (In: International Congress of Refrigeration. 2nd Vienna, 1910. Reports and proceedings, English edition. Vienna, 1911. 8vo. p. 363-371.)

Cold storage for Iowa grown apples. (Iowa. Agricultural Experiment Station. Ames, 1909. 8vo. Bull. 108. p. 394-414.)

CONGRÈS INTERNATIONAL DU FROID.

Premier congrès international du froid. Paris, 5 au 12 Octobre, 1908. Paris: Secrétariat Général de l'Association Internationale du Froid [1908-1909]. 3v. 4to.

Tome 1. Comptes rendus du congrès. . . .

Tome 2-3. Rapports et communications.

COOPER, MADISON.

Cold storage of eggs. (Congrès international du froid. I. Rapports et communications. Paris [1908]. Tome 2. 4vo. p. 737-749.)

COOPER, MADISON.

Eggs in cold storage. Theory and practice in preserving eggs by refrigeration. Data, experiments, hints on construction, etc., from practical experience, with illustrations. Chicago: H. S. Rich & Co., 1899. 88 p. 8vo.

DAVID, D. L.

Refrigeration of fresh and other meats in transit. (Congrès international du froid. I. Rapports et communications. Paris [1909]. Tome 3. 4to. p. 589-593.)

DENNIS, S. J.

The precooling of fruit in the United States. (In: International Congress of Refrigeration, 2nd Vienna, 1910. Reports and proceedings, English edition. Vienna, 1911. 8vo. p. 464-486.)

EMMETT, A. D., AND H. S. GRINDLEY.

A preliminary study of the effect of cold storage upon beef and poultry. (American Chemical Society. Journal of Industrial and Engineering Chemistry. Easton, 1909. 4to. v. 1. p. 413-435.)

GEDDES, J. H.

Cold storage organization of warehouses and central markets. (Congrès international du froid. I. Rapports et communications. Paris [1908]. Tome 2. 4to. p. 919-923.)

HOLMES, GEORGE K.

Economic results of cold storage. (Ice and Refrigeration. Chicago, 1912. folio. v. 42. p. 36-40.)

HOLMES, G[EO]RGE K.

Economic results of cold storage. (Special investigation by the United States Department of Agriculture.) (American Warehousemen's Association. Proceedings of the twenty-first annual meeting held at . . . Chicago, Ill., Dec. 6th, 7th, and 8th, 1911 . . . [Chicago, 1912]. 8vo. p. 232-249.)

HORNE, FRANK A.

Legislation affecting cold storage and cold stored products. (Ice and Refrigeration. Chicago, 1911. folio. v. 41. p. 180-183.)

HORR, GEORGE B.

The refrigeration of dairy products and dressed poultry—in transit. (Congrès international du froid. I. Rapports et communications. Paris [1909]. Tome 3. 4to. p. 594-600.)

ICE AND REFRIGERATION.

v. 2 to date. (1892—date.) Chicago, 1892—date. folio.

INSTITUT DU MOIS SCIENTIFIQUE ET INDUSTRIAL.

Le froid industriel et ses applications. [Préparé et rédigé par la Section de Mécanique de l'Institut du M. S. I.] Paris: A. Hermann et Fils [1911]. 121 (1) p. illus. 2nd ed. 8vo. (Mois Scien. et Indus. Bibliothèque pratique. no. 2.)

INTERNATIONAL Congress of Refrigeration. 2nd Vienna, 1910. Reports and proceedings, English edition. Vienna: J. Weiner, 1911. 1167 p. 8vo.

JONG, D. A. DE.

Les établissements frigorifiques aux abattoirs des Pays-Bas. (Congrès international du froid. I. Rapports et communications. Paris [1908]. Tome 2. 4to. p. 702-737.)

KAISER, FRANZ J.

Application of cold in public dairy management. (In: International Congress of Refrigeration. 2nd Vienna, 1910. Reports and proceedings, English edition. Vienna, 1911. 8vo. p. 412-418.)

LEEDS, J. S.

Refrigeration of citrus fruits in transit from California. (Congrès international du froid. I. Rapports et communications. Paris [1909]. Tome 3. 4to. p. 602-612.)

LEHNERT, W. M.

Die Kältezeugungsanlagen auf dem städt. Vieh- und Schlachthofe Dresden. illus. (Zeitschrift für die gesamte Kälte-Industrie. München, 1911. 4to. Jahrgang 18. p. 101-120.)

LESCARDÉ, F.

The preservation of eggs by refrigeration. (In: International Congress of Refrigeration. 2nd Vienna, 1910. Reports and proceedings, English edition. Vienna, 1911. 8vo. p. 406-407.)

LITTLEFIELD AND LITTLEFIELD.

Brief on Senate cold storage bill. Legal opinion on the pending cold storage bill in the United States Senate known as S. 136. (Ice and Refrigeration. Chicago, 1911. folio. v. 41. p. 80-83.)

MARSHALL, CHAS. E.

The effect of cold storage upon bacteriological and chemical changes in milk and butter as revealed by laboratory investigation in the United States. (In: International Congress of Refrigeration. 2nd Vienna, 1910. Reports and proceedings, English edition. Vienna, 1911. 8vo. p. 386-400.)

MARTEL, H.

The respective comparative values of frozen and chilled meat from the point of view of general consumption, and more particularly of the provision of the army, the navy, and public and private administrations. (In: International Congress of Refrigeration. 2nd Vienna, 1910. Reports and proceedings, English edition. Vienna, 1911. 8vo. p. 317-328.)

MARTEL, H.

Les viandes, la volaille, le gibier et le poisson. Conservation par l'emploi du froid. Inspection. illus. (Revue de la société scientifique d'hygiène alimentaire. . . . Paris, 1908. 8vo. Tome 5. p. 3-81.)

MASSACHUSETTS. Cold Storage, Commission on.

Report of the commission to investigate the subject of the cold storage of food and of food products kept in cold storage. January, 1912. Boston: Wright & Potter Printing Co., 1912. 308 p., 1 chart. 8vo. (House doc. no. 1733.)

MESSNER, HANS.

On the importance of refrigeration for foods, with special consideration of milk. (In: International Congress of Refrigeration. 2nd Vienna, 1910. Reports and proceedings, English edition. Vienna, 1911. 8vo. p. 421-429.)

NOBEL, O. K.

Die Kühlanlage in der Städtischen Markthalle für Fleisch, etc., zu Kopenhagen, Dänemark. illus. (Zeitschrift für die gesamte Kälte-Industrie. München, 1911. 4to. Jahrgang 18. p. 63-69.)

NOUVION, GEORGES DE.

La crise alimentaire et l'industrie frigorifique. (Journal des Économistes. Paris, 1912. 4to. Série 6. Tome 23. p. 62-74.)

PENNINGTON, MARY E.

Effects of temperature on changes in the flesh of poultry. (American Warehousemen's Association. Proceedings of the twenty-first annual meeting held at . . . Chicago, Ill., Dec. 6th, 7th, and 8th, 1911. . . . [Chicago, 1912.] 8vo. p. 250-257.)

PENNINGTON, MARY E.

The refrigeration of poultry and eggs in the United States. (In: International Congress of Refrigeration. 2nd Vienna, 1910. Reports and proceedings, English edition. Vienna, 1911. 8vo. p. 592-631.)

PENNINGTON, MARY E.

Up-to-date methods in the handling of poultry and eggs. (Ice and Refrigeration. Chicago, 1911. folio. v. 41. p. 178-180.)

PERRET, A. H.

La conservation des denrées alimentaires par le froid. (Revue de la société scientifique d'hygiène alimentaire. . . . Paris, 1908. 8vo. Tome 5. p. 426-448.)

POWELL, G. HAROLD.

The extension of markets through improvements in the handling and in the refrigeration of horticultural products. (Congrès international du froid. I. Rapports et communications. Paris [1908]. Tome 2. 4to. p. 780-798.)

PROCTOR, P. B.

The value of refrigeration in the food supply of the poorer classes. (Congrès international du froid. I. Rapports et communications. Paris [1909]. Tome 3. 4to. p. 927-931.)

QUERY, DR. L. C.

Changes which may be induced by cold in the physical, chemical, and morphological composition of foodstuffs, especially meat, fish, milk and its products, fruit, etc. (In: International Congress of Refrigeration. 2nd Vienna, 1910. Reports and proceedings, English edition. Vienna, 1911. 8vo. p. 372-380.)

RAPPIN AND THARREAUD.

Contribution a l'étude de la conservation des oeufs par le froid. (Congrès international du froid. I. Rapports et communications. Paris [1908]. Tome 2. 4to. p. 754-764.)

REID, WALTER C.

Cold storage legislation. (Congrès international du froid. I. Rapports et communications. Paris [1909]. Tome 3. 4to. p. 829-844.)

ROGERS, L. A.

Manufacture of butter for storage. (American Warehousemen's Association. Proceedings of the twentieth annual meeting held at . . . Washington, D. C., Dec. 7th, 8th, and 9th, 1910. . . . [Washington, 1911.] 8vo. p. 223-230.)

RUDDICK, J. A.

Cold storage and the cold storage act. Ottawa, 1910. 27 p. illus. 8vo. (Canada, Dom., Dairy and Cold Storage Commissioner's Branch. Bulletin no. 23.)

SUBSIDIES for cold storage warehouses. Ottawa, 1907. 12 p. 8vo. (Canada, Dom., Dairy and Cold Storage Commissioner's Branch. Bulletin no. 16.)

SWITZLER, R. H.

Cold storage legislation. State and federal. (Ice and Refrigeration. Chicago, 1911. folio. v. 41. p. 155-157.)

TAIT, R. H.

Cold storage organization of warehouses and central markets. (Congrès international du froid. I. Rapports et communications. Paris [1908]. Tome 2. 4vo. p. 1029-1033.)

TAYLOR, WILLIAM A.

The influence of refrigeration on the fruit industry. 5 pl. (In: United States. Agriculture Department. Yearbook, 1900. Washington, 1901. 8vo. p. 561-580.)

TROUBRIDGE CRITCHELL, JAMES.

Imports of refrigerated food products of the United Kingdom, 1880-1907. Progress and statistics. Congrès international du froid. I. Rapports et communications. Paris [1909]. Tome 3. 4to. p. 299-327.)

UNITED STATES. Chemistry Bureau.

Use of cold storage. Letter from the Secretary of Agriculture transmitting certain data on cold storage and cold storage products, by Dr. H. W. Wiley, Chief of the Bureau of Chemistry. Washington: Gov. Prtg. Off., 1910. 23 p., 2 pl. 8vo. (U. S. 61st cong. 2nd sess. Sen. doc. no. 486. v. 60.)

UNITED STATES. Manufactures Committee (Senate).

Report of committee and hearings held before the Senate Committee on Manufactures relative to food held in cold storage. Washington: Gov. Prtg. Off., 1911. xii-3-340 p. 8vo.

U. S. 61st cong. 3d sess. Senate report 1272.

VAMOS, EUGEN.

The meat problem and the refrigerating industry. (In: International Congress of Refrigeration. 2nd Vienna, 1910. Reports and proceedings, English edition. Vienna, 1911. 8vo. p. 356-362.)

VAN DER VAART, S. S.

Growth and present status of the refrigerating industry in the United States. (Congrès international du froid. I. Rapports et communications. Paris [1909]. Tome 3. 4to. p. 330-350.)

VIRY, H.

A comparison of the respective values of frozen and chilled meats from the point of view of general provisioning and more especially of provisioning of the army and large bodies. (In: International Congress of Refrigeration. 2nd Vienna, 1910. Reports and proceedings, English edition. Vienna, 1911. 8vo. p. 329-338.)

WANJENBERGH, L. VAN.

The application of mechanical refrigeration to the preservation of fresh and salt meat. (In: International Congress of Refrigeration. 2nd Vienna, 1910. Reports and proceedings, English edition. Vienna, 1911. 8vo. p. 401-405.)

WELD, L[OUIS] D[WIGHT] H[ARVELL].

Private freight cars and American railways. New York: Columbia University, 1908. 185 p. 8vo. (Columbia Univ. Studies in history, economics, and public law. v. 31, no. 1.)

WILEY, H. W.

A preliminary study of the effects of cold storage on eggs, quail, and chickens. Washington: Gov. Prtg. Off., 1908. 117 p., 13 pl. 8vo. (United States. Chemistry Bureau. Bull. no. 115.)

ZEITSCHRIFT für die gesamte Kälte-Industrie. . . . Unter Mitwirkung hervorragender Gelehrten und Praktiker, herausgegeben von Dr.-Ing. C. Heinel. München. 4to.

ZIMMERMANN, F. W. R.

Die Kühlagerung frischer Apfel in den Vereinigten Staaten von Nord-Amerika. (Landwirtschaftliche Jahrbücher. Berlin, 1904. 4to. v. 33. p. 917-923.)

V. TRANSPORTATION OF FOOD PRODUCTS

GRIFFIN, APPLETON PRENTISS CLARK.

A list of books (with references to periodicals) relating to railroads in their relation to the government and the public, with appendix list of references on the Northern Securities case. Washington: Gov. Prtg. Off., 1904. 1 pl., vi, 5-72 p. 4to. (U. S. Library of Congress.)

LIST OF WORKS ON RAILWAYS AND AGRICULTURE.

(Bureau of Railway Economics, Washington, D. C. Railway economics; a collective catalogue of books in fourteen American libraries. Chicago [1912]. 4to. p. 15-16.)

NEW YORK PUBLIC LIBRARY.

List of works in the New York Public Library relating to government control of railroads, rates regulation, etc. (N. Y. Public Library. Astor, Lenox, and Tilden Foundations. Bulletin. New York, 1906. 8vo. v. 10. p. 184-209.)

ANNALS of the American Academy of Political and Social Science. "Reducing the Cost of Food Distribution." Nov., 1913. Philadelphia.

ANDREWS, FRANK.

Costs of hauling crops from farms to shipping points. Washington: Gov. Prtg. Off., 1907. 63 p. 8vo. (United States. Statistics Bureau, Agriculture Dept. Bulletin no. 49.)

ANDREWS, FRANK.

Freight costs and market values. (U. S. Agriculture Dept. Yearbook, 1906. Washington, 1907. p. 371-386.)

ANDREWS, FRANK.

Marketing grain and live stock in the Pacific Coast region. Washington: Gov. Prtg. Off., 1911. 94 p. 8vo. (U. S. Statistics Bureau, Agriculture Dept. Bulletin 89.)

CORBETT, L. C.

Influence of transportation on agricultural interests, as illustrated in the truck crops. (In: Bailey, L. H., Cyclopedia of American Agriculture. New York, 1909. v. 4. p. 252-255.)

DREISER, THEODORE.

The railroad and the people. A new educational policy now operating in the West. (Harper's Magazine. New York, 1900. v. 100. p. 479-484.)

DUGIT-CHESAL.

Quelques réflexions sur le transport des denrées alimentaires. (Revue de la société scientifique d'hygiène alimentaire. . . . Paris, 1908. 8vo. Tome 5. p. 449-456.)

FREIGHT charges in England on agricultural products. (U. S. Statistics Division, Agriculture Department. Miscellaneous series. Bull. no. 12. Washington, 1896. p. 43-53.)

FREIGHT charges for ocean transportation of the products of agriculture. Washington: Gov. Prtg. Off., 1896. 42 p. 8vo. (U. S. Statistics Division, Agriculture Department. Miscellaneous series. Bull. no. 12.)

GODFERNAUX, RAYMOND.

Report no. 3. (All countries except the United States, England, and the Colonies.) On the question of the conveyance of farm produce to stations on the main railways. . . . (International Railway Congress. Bulletin. Brussels, 1900. v. 142. p. 2537-2568.)

JOHNSON, EMORY R[ICHARD] AND G. G. HEUBNER.

Railroad traffic and rates. New York: D. Appleton & Company, 1911. 2 v. 8vo. (Appleton's Railway Series.)

v. 1. The freight service.

v. 2. Passenger, express, and mail service.

MCPHERSON, LOGAN G[RANT].

The farmer, the manufacturer, and the railroad. New York: North American Review Pub. Co. [1907]. 13 p. 8vo.

Repr.: North American Review, Nov., 1907.

McPHERSON, LOGAN G[RANT].

Railroad freight rates in relation to the industry of the United States. New York: Henry Holt, 1909. xi, 441 p. maps. 8vo.

VI. THE DISTRIBUTION OF FOODSTUFFS

McPIKE, EUGENE F.

Transportation of perishable freight in America. Present practice and desiderata. (In: International Congress of Refrigeration. 2nd Vienna, 1910. Reports and proceedings, English edition. Vienna, 1911. 8vo. p. 1003-1017.)

NEWCOMB, H. T.

Railway progress and agricultural development. (Yale Review. New Haven, 1901. 8vo. v. 9. p. 33-57.)

NEWCOMB, H. T.

Railway rates and the cost of living. Washington, D. C., 1906. 28 p. 8vo.

NILSSON, LAURITZ.

Railway refrigeration cars. (In: International Congress of Refrigeration. 2nd Vienna, 1910. Reports and proceedings, English edition. Vienna, 1911. 8vo. p. 979-995.)

QUESTION 40. Conveyance of farm produce to stations on the main railways. . . .

[Discussions.] (International Railway Congress. Bulletin. Brussels, 1902. v. 16. p. 853-871.)

STETEFELD, RICH.

Refrigerated railway transportation. (In: International Congress of Refrigeration. 2nd Vienna, 1910. Reports and proceedings, English edition. Vienna, 1911. 8vo. p. 1018-1032.)

UNITED STATES. Interstate Commerce Commission.

Freight rates on commodities of life. Letter from the Secretary of the Interstate Commerce Commission . . . transmitting tables showing comparisons of rates from and including 1900 between various points. . . . [Washington: Gov. Prtg. Off., 1910.] 18 p. 8vo. (U. S. 61. Cong. 2. sess. Sen. doc. v. 46. no 441.)

UNITED STATES. Interstate Commerce Commission.

Freight rates on commodities of life. [Washington: Gov. Prtg. Off., 1910.] 18 p. 8vo. (U. S. 61. cong. 2. sess. Sen. doc. no. 441. v. 46.)

WARD, EDWARD G.

Milk transportation: freight rates to the largest fifteen cities in the United States. Washington: Gov. Prtg. Off., 1903. 60p. 8vo. (U. S. Statistics Bureau, Agriculture Department. Bulletin no. 25.)

WARD, EDWARD G., and EDWIN S. HOLMES.

Rates of charge for transporting garden truck, with notes on the growth of the industry. Washington: Gov. Prtg. Off., 1901. 86p. 8vo. (U. S. Statistics Division, Agriculture Department. Miscellaneous series, Bull. no. 21.)

WELD, L[OUIS] D[WIGHT] H[ARVELL].

Private freight cars and American railways. New York: Columbia University, 1908. 185p. 8vo. (Columbia Univ. Studies in history, economics and public law. v. 31. no. 1.)

WENDRICH, ALFRED DE.

Statistics of refrigerated transportation. (In: International Congress of Refrigeration, 2nd Vienna, 1910. Reports and proceedings, English edition. Vienna, 1911. 8vo. p. 937-944.)

VII. COOPERATION, WITH SPECIAL REFERENCE TO THE PRODUCTION AND DISTRIBUTION OF FOOD PRODUCTS

ADAMS, EDWARD F[RANK].

The modern farmer in his business relations. A study of some of the principles underlying the art of profitable farming and marketing, and of the interests of farmers as affected by modern social and economic conditions and forces. With a chapter by Mr. L. A. Clinton. San Francisco: N. J. Stone Co., 1899. vi, 7-662p. 8vo.

p. 202-293. The farmer as a coöperator.

p. 434-529. The coöperative fruit marketing societies of California.

BAILEY, L[IBERTY] H.

The country life movement in the United States. New York: The Macmillan Co., 1911. xi, 220p. 12mo.

p. 149-164. The middleman question.

BRINKMANN, THEODOR.

Die dänische Landwirtschaft. Die Entwicklung ihrer Produktion seit dem Auftreten der internationalen Konkurrenz und ihre Anpassung an der Weltmarkt vermittels genossenschaftlicher Organisation. Jena: G. Fischer, 1908. ix, 197p., 2 diag. 8vo. (Jena. Universität.-Staatswissenschaftliches Seminar. Abhandlungen. Bd. 61.)

CANADA (DOM.) HOUSE OF COMMONS.

Report of the special committee of the House of Commons, to whom was referred bill No. 2, an act respecting industrial and coöperative societies. . . . Ottawa: S. E. Dawson, 1907. xii, 204p. pap. 4to. (App. 3-1907.)

CASTRO, LUIZ DE.

Les associations agricoles en Portugal. [Revue d'économie Politique. Paris, 1909. 4to. v. 23. p. 604-621.]

COÖPERATION. . . . Published monthly by the Coöperative Education Bureau [of the Right Relationship League]. v. 1-date. Minneapolis, 1909-date. 8vo.

Coöperation in practice. (Economic Review. London, 1898. 8vo. v. 8. p. 314-325.)

COÖPERATIVE marketing in fruits. (In: Bailey, L. H. Cyclopedic of American agriculture. New York, 1909. v. 4. p. 265-267.)

COUTLER, JOHN LEE.

Coöperation among farmers, the keystone of rural prosperity. New York: Sturgis & Walton Company, 1911. 3 p. 1., v-vii p., 2 l., 3-281p., 2 pl. 12mo. (Young farmer's practical library.)

COUTLER, JOHN LEE.

The coöperative farmer, whose organization gives him the best markets to sell in and saves him fifteen or twenty per cent. in buying. Definite experience. (World's work. Garden City, N. Y., 1911. 8vo. v. 23. p. 59-63.)

COULTER, JOHN LEE.

Coöperation in the marketing of agricultural produce [with a discussion on agricultural economics.] (American Economic Association. Publications. Princeton, 1909. v. 3. p. 258-274.)

CRISSEY, FORREST.

Coöperation close to the soil. (Everybody's Magazine. New York, 1909. v. 21. p. 406-416.)

CROSS, IRA B.

Coöperation in California. (American Economic Review. Princeton, 1911. 8vo. v. 1. p. 535-544.)

DUFOURMANTELLE, MAURICE.

Agricultural credit. Translated from the French by P. C. Biddle. Philadelphia: Allen, Lane & Scott [cop. 1912.] 1 pl., 43p. 8vo.

DULAC, ALBERT.

Agricultural coöperation in the United Kingdom. (Econ. Rev. London, 1902. v. 12, p. 185-198.)

EYERLY, E. K.

Coöperative movements among farmers. (Amer. Acad. of Political and Social Science. Annals. Philadelphia, 1912. 8vo. v. 40, p. 58-68.)

EYERLY, E. K.

Successful coöperation among fruit growers. (Journal of Political Economy. Chicago, 1909. 4to. v. 17. p. 92-95.)

FAY, C[HARLES] R[YLE].

Coöperation at home and abroad: a description and analysis. London: P. S. King & Son, 1908. xvi, 403p. 8vo.

FAY, C[HARLES] R[YLE].

Small holdings and agricultural coöperation in England. (Quarterly Journal of Economics. Cambridge, 1910. 8vo. v. 24. p. 499-514.)

FINLAY, T. A.

Agricultural coöperation in Ireland. (British Economic Association. Economic Journal. London, 1896. 4to. v. 6. p. 204-211.)

GIDE, CHARLES.

La coopération: conférences de propagande. Paris: L. Larose & Forcel, 1900. 1 p. 1, vii, 311p., 2 l. 8vo.

GOLDSCHMIDT, CONRAD.

Bäckereigewerbe und Konsum-Vereine: eine Untersuchung. Stuttgart: J. G. Cotta, 1910. viii, 96p. 8vo. (Münchener volkswirtschaftliche Studien. Stück, 101.)

GORJU, CAMILLE.

L'évolution coopérative en France. Partie 2. Paris: M. Rivière, 1911. 1 v. 12mo. Partie 2. Exposé économique des méthodes de concentrations dans les coöperatives agricoles de production.

GREAT BRITAIN. Commercial, labour and statistical department. Coöperative societies. Board of trade (Labour department). Report on industrial and agricultural coöperative societies in the United Kingdom, with statistical tables. London: Darling and Son, Ltd., 1912. 1 v., 273p., 3 charts. pap. 8vo. (Cd. 6045.)

GREAT BRITAIN. Foreign Office.

Commercial, 1886, no. 20. Report by Her Majesty's representatives abroad, on the system of coöperation in foreign countries. London: Harrison and Sons [1886]. 1 p. l., 139p. 8vo.

In: Great Britain. Parliament. Sessional papers. 1886, v. 67.

GREAT BRITAIN. Labour department.

Workmen's coöperative societies. Report on workmen's coöperative societies in the United Kingdom, with statistical tables. London: Darling & Son, Ltd., 1901. xlviii, 252p. folio. (Board of Trade.) C. 698.

In: Great Britain. Parliament. Sessional papers. 1901. v. 74.

HAGGARD, H. RIDER.

Rural Denmark and its lessons. London: Longmans, Green and Co., 1911. xi, 335p., 16 pl. 8vo.

HARWOOD, W. S.

Five hundred farmers. (Century. New York, 1903. v. 66. p. 98-100.)

HAYS, WILLET M.

Coöperation in agriculture. [Washington: Gov. Prtg. Off., 1910.] 10p. 8vo. (U. S. 61. cong. 2. sess. Sen. doc. no. 294. v. 58.)

HIBBARD, B. H.

Coöperation in the grain-elevator business. (In: Bailey, L. H. Cyclopedica of American agriculture. New York, 1909. v. 4. p. 267-269.)

History of coöperation in the United States. Baltimore, 1888. (Johns Hopkins University Studies in historical and political science, v. 6.)

HOLYOAKE, GEORGE JACOB.

The history of coöperation in England: its literature and its advocates. London: Trübner & Co., 1875-79. 12mo.

v. 1. The pioneer period—1812-1844.

v. 2. The constructive period—1845-1878.

INTERNATIONAL COÖPERATIVE ALLIANCE.

Bibliographie coopérative internationale. International coöperative bibliography. Allgemeine genossenschaftliche Bibliographie; publié par . . . l'Alliance coöperative internationale; the International Coöperative Alliance; der Internationalen Genossenschafts-Allianz. London: the Alliance, 1906. xxiii, 4 l., 276p., 3 tab. 4to.

JACKSON, EDWARD.

A study in democracy: being an account of the rise and progress in industrial coöperation in Bristol, Manchester: Coöperative Wholesale Society's Printing Works, 1911. xvi, 606p. illus. 12mo.

JOHNSON, FELIX S. S.

Canadian coöperative fruit associations. (U. S. Manufactures Bureau. Daily consular and trade reports. Washington, 1911. 8vo. Year 14, no. 237. p. 145-149.)

KING, BOLTON.

Agricultural coöperation in Italy. (Royal Agricultural Society of England. Journal. London, 1902. 8vo. v. 63. p. 60-75.)

LEVETUS, MDLLE, A. S.

Les coopératives de Gros d'Angleterre et d'Ecosse (1897-1909.) (Rev. d'économie politique. Paris, 1911. 8vo. année 25, p. 745-764.)

LOENING, EDGAR.

Das englische Genossenschaftsrecht. (Jahrbücher für Nationalökonomie und Statistik. Jena, 1912. 8vo. F. 3, Bd. 43, p. 33-64.)

MCCABE, DAVID A.

The recent growth of coöperation in Ireland. (Quarterly Journal of Economics. Boston, 1906. 8vo. v. 20. p. 547-574.)

MCNEILL, A.

Coöperation in the marketing of apples. Ottawa, 1907. 28p. 8vo. (Canada, Dom. Dairy and Cold Storage Commissioner's Branch. Bulletin no. 18.)

MONTGOMERY, H. DE F.

Agricultural coöperation in Germany. (Ireland. Agriculture and Technical Instruction Department. Journal. Dublin, 1903-1905. 8vo. v. 4, no. 2. p. 214-251. v. 5. no. 1. p. 34-47. v. 6. no. 1. p. 16-23.)

MORMAN, JAMES B.

Business coöperative organizations in agriculture. (In: Bailey, L. H. Cyclopedia of American agriculture. New York, 1909. v. 4. p. 255-264. Bibliography, p. 264.)

MUELLER, FRIEDRICH, Dr. of Gehardsbrum.

Die geschichtliche Entwicklung des landwirtschaftlichen Genossenschaftswesens in Deutschland von 1848-49 bis zur Gegenwart. Leipzig: A. Deichert, 1901. xx, 552p. 8vo. (Wirtschafts-und Verwaltungsstudien mit besonderer Berücksichtigung Bayerns, Bd. 10.)

O'DONNELL, THOMAS.

A trip to Denmark. Dublin: M. H. Gill & Son, Ltd., 1908. 2 p. 1, ii, (1)8-48, iip, 1 l. 8vo.

PALS, MAX H. VAN GILSE VAN DER.

Das landwirtschaftliche Genossenschaftswesen in Finland. Zürich: A. Markwalder, 1908. 114p., 2 diag., 1 map, 5 tables. 8vo.

PAYNE, WILL.

Coöperation that fails. Saturday Evening Post, Feb. 8, 1913.

PETERS, THOMAS WILLING.

Agricultural coöperation in Bavaria. (U. S. Manufactures Bureau. Daily consular and trade reports. Washington, 1911. 8vo. Year 14. no. 121. p. 833-837.)

PLUNKETT, SIR HORACE.

Agricultural coöperation in Ireland. (Progress, civic, social, industrial. The organ of the British Institute of Social Service. Letchworth, 1906. 8vo. v. 1. no. 2. p. 98-105.)

POTTER, BEATRICE.

Coöperative (The) movement in Great Britain. London, 1891. 12mo. (Social science series.)

POWELL, G. HAROLD.

Coöperation in the handling and marketing of fruit. (In: United States. Agriculture Department. Yearbook, 1910. Washington, 1911. p. 391-406.)

PRATT, EDWIN A.

The transition in agriculture. New York: E. P. Dutton and Co., 1906. x, 350p., 2 plans, 10pl. 8vo.

p. 189-1904. Coöperative fruit-grading.

p. 195-206. Marketing problems.

Present, The, ideals of coöperation. (British Economic Association. Economic Journal. London, 1902. 4to. v. 12. p. 29-41.)

RADFORD, GEO[RGE].

Agricultural coöperation. Westminster: P. S. King & Son [1909?] 3 p. 1., 74p. 8vo. (Our Land reprints [v.] 1.)

RAFFALOVICH, ARTHUR.

Les associations coopératives en Allemagne. (Journal des Économistes. Paris, 1909. 4to. série 6. tome 22. p. 227-234.)

RIEHN, REINHOLD.

Das Konsumvereinswesen in Deutschland: seine volkswirtschaftliche und soziale Bedeutung . . . Stuttgart: J. G. Cotta, 1902. xvi, 132p. 8vo. (Münchener volkswirtschaftliche Studien. . . v. 51.)

RIVET, HENRI.

Les boulangeries coopératives en France. Paris: Librairie de la Société du Recueil Général des Lois et des Arrêtes, 1904. 352p. 4to. (Université de Paris. Faculté de droit.)

Dissertation, Paris.

SERWY, VICTOR.

Manual pratique de la coopération. Comment on fonde, on administre et on fait prospérer une coopérative. Gand: Soc. Coopérative Volksdrukkerii, 1903. viii, 9-144p. 8vo.

STARRETT, HENRY P.

Formation of Cuba Fruit Exchange. (U. S. Manufactures Bureau. Daily consular and trade reports. Washington, 1911. 8vo. Year 14. no. 237. p. 157.)

State aid to agricultural coöperation in France. (Ireland. Agriculture and Technical Instruction Department. Journal. Dublin, 1909. vi. 10. no. 1. p. 72-79.)

State aid to agriculture in Switzerland. (Ireland. Agriculture and Technical Instruction Department. Journal. Dublin, 1910. v. 10. no. 3. p. 499-506.)

SURCOUF, JOSEPH.

Les sociétés coopératives de consommation en France. Rennes: F. Simon, 1902. ix, 243p. 8vo.

VINCENT, C.

Coöperation among western farmers. (Arena. Trenton, 1904. 8vo. v. 31. p. 286-292.)

VOUTERS, HENRY.

Le petit commerce contre les grands magasins et les coopératives de consommation. Paris: A. Rousseau, 1910. 3 p. 1., 205p. 4to.

WEBB, CATHERINE.

Industrial coöperation; the story of a peaceful revolution. Being an account of the history, theory and practice of the coöperative movement in Great Britain and Ireland. . . . With a preface by L. L. Price. Manchester: The Coöperative Union, Ltd., 1904. xx, 278p., 1 l. 3 port. 8vo.

Bibliography, p. 267-272.

WELLIVER, JUDSON C.

Eliminating the middleman between farmer and consumer. *Munsey's Magazine*, April, 1913.

WOLFF, HENRY W.

Coöperative ideals. (*Economic Review*. London, 1899. 8vo. v. 9. p. 42-66.)

WOOD, D. A.

A farmers' trust. How five hundred Iowa farmers organized a corporation to dispose of farm products and to furnish supplies—their contest with the middlemen. . . . (*World's Work*. New York, 1903. v. 6, no. 3. p. 3651-3656. illus.)

WOOD, JOHN Q.

Aids to agriculture. Italy. Government schools superintend planting. Co-operative work. (U. S. Manufactures Bureau. Daily consular and trade reports. Washington, 1910. 8vo. New series. v. 1. no. 33. p. 446-447.)

WYGODZINSKI, W[ILLY].

Das Genossenschaftswesen in Deutschland. Leipzig: B. G. Teubner, 1911. vi, 287(1)p. 8vo. (B. G. Teubner's Handbücher für Handel und Gewerbe.)

AN ACT

To amend the Greater New York Charter, in relation to the establishment, organization, powers and duties of a department of markets.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Section ninety-six of the Greater New York charter, as reenacted by chapter four hundred and sixty-six of the laws of nineteen hundred and one, is hereby amended to read as follows:

96. ADMINISTRATIVE DEPARTMENTS. There shall be the following administrative departments in said city:

- Department of finance.
- Law Department.
- Police Department.
- Department of water supply, gas and electricity.
- Department of street cleaning.
- Department of bridges.
- Department of parks.
- Department of public charities.
- Department of correction.
- Fire Department.
- Department of docks and ferries.
- Department of taxes and assessments.
- Department of education.
- Department of Markets.*
- Department of health.
- Tenement house department.

Section 2. The Greater New York charter, as reenacted by chapter four hundred and sixty-six of the laws of nineteen hundred and one, is hereby amended by inserting therein, after section one hundred and ten, a new section to be section one hundred and ten-a, to read as follows:

110-a. DEPARTMENT OF MARKETS. The head of the department of markets shall be called the market board; such board shall consist of five members, who shall be known as market commissioners.

Section 3. The Greater New York Charter, as reenacted by chapter four hundred and sixty-six of the laws of nineteen hundred and one, is hereby amended by adding thereto a new chapter, to be chapter 18-a thereof, to read as follows:

CHAPTER XVIII-a.

DEPARTMENT OF MARKETS.

- Title 1. Organization of department, officers and employees.
2. Powers and duties of department.

TITLE 1.

ORGANIZATION OF DEPARTMENT, OFFICERS AND EMPLOYEES.

Section 1163. Market board; appointment, removal and salaries of members.

1163a. Seal.

1163b. Offices.

1164. Rules and regulations.

1164a. Subordinate officers and employees.

1164b. Transfer from other departments.

1165. Expenses of department.

1163. MARKET BOARD, APPOINTMENT, REMOVAL AND SALARIES OF MEMBERS. The head of the department of markets shall be called the market board; said board shall consist of five members, who shall be known as market commissioners. The mayor shall appoint one of such commissioners for each borough of the City, who shall hold his office as provided in chapter four of this act. Each market commissioner shall be a resident of the borough for which he was appointed at the time of his appointment, and he shall remain a resident thereof throughout his term of office. One of said commissioners shall be the president of the board, and shall be so designated by the mayor. The salaries of the president and the other members of the board shall be fixed by the board of aldermen upon the recommendation of the board of estimate and apportionment. The mayor shall not appoint the president or any other member of the market board until the salary of such president or member shall have been fixed as herein provided. Within ten days after the appointment and qualification of its president and other members, the market board shall hold its first meeting and organize the department of markets.

1163-a. SEAL. The market board may adopt a seal for the department of markets, the form and design of which shall be that of the common seal of the City with the name of the department thereon. The board may cause the seal to be used in the authentication of the orders and proceedings of the department and for such other purposes as the board may prescribe. The courts shall take judicial notice of such seal, and of the signature of the president of the board and of any market commissioner.

1163-b. OFFICES. The principal office of the department of markets shall be in the borough of Manhattan, and the market board shall establish and maintain offices in each of the other boroughs wherein the business and duties of the department shall be performed and discharged under its rules, regulations and control.

1164. RULES AND REGULATIONS. The market board may establish and enforce rules and regulations, not inconsistent with the law, for the government of the department of each branch thereof, and of the commissioners and all other officers and employees of the department.

1164-a. SUBORDINATE OFFICERS AND EMPLOYEES. The Market Board shall have the power to appoint a secretary and such subordinate officers as may be necessary for the proper conduct of the offices of the department. Each commissioner shall have power to appoint and remove, subject to the requirements of the Civil Service Law and the rules and regulations of the municipal civil service commissions and the market board, such market masters, market inspectors and other subordinate officers, assistants and employees as may be necessary for the efficient performance of his duties as such commissioner, and every such market master, market inspector, officer, assistant and employee shall be subject to the supervision and control of the commissioner in his borough and shall perform such duties as are assigned to him by the commissioner of the market board. Any employee of the department may be punished by the market board for neglect of duty, for omission to properly perform his duty, for viola-

tion of, or neglect or disobedience of orders, or incapacity, or for absence without leave, by forfeiting and withholding pay for a specified time, or by suspension from duty with or without pay. This section shall not be deemed to abridge the right of the board or of a commissioner to remove any market master, market inspector or other subordinate in his borough, as provided in section fifteen hundred and forty-three of this act.

1164-b. TRANSFERS FROM OTHER DEPARTMENTS. Upon the organization of the department of markets all employees of every class and grade attached to the office of the president of each borough of the City, who, on the date of the organization of the department of markets as provided in the preceding section, are employed in or about the construction, repair, cleaning and maintenance of public markets, shall then become employees of like classes and grades of the department of markets, and, as such, shall thereafter continue, subject to the provisions of section 1164-a of this chapter, to perform the duties theretofore performed by them under the supervision of the borough presidents. The collector of city revenue and superintendent of markets shall, on the date of the organization of the department of markets as provided in the preceding section, become superintendent of markets, under the supervision of the market board, subject to the provisions of section 1164-a of this chapter. All other employees of every class and grade of the bureau of city revenue and of markets, of the department of finance, who, on the date of the organization of the department of markets as provided in the preceding section, are employed in and about the administration of the public market system of the City, or any part thereof, shall become employees of like class and grade of the department of markets and shall continue, subject to the provisions of section 1164-a of this chapter, to perform the duties theretofore performed by them under the supervision of the comptroller and of the collector of city revenue and superintendent of markets. All employees of the City who shall be transferred to the department of markets, pursuant to the provisions of this section, shall continue subject to the provisions of section 1164-a of this chapter, upon the pay rolls of the departments, bureaus or offices from which they shall have been transferred to the department of markets, without loss or reduction of compensation, until provision is made for the payment of their compensation as officers or employees of the department of markets by the board of aldermen and the board of estimate and apportionment.

1165. EXPENSES OF DEPARTMENT. The market board may, subject to other provisions of this act, make such incidental and additional expenditures as the purposes and provisions of this chapter may require. In order to provide means for the payment of the expenses of the department of markets for the remainder of the year nineteen hundred and fourteen, including the rental of offices for the use of the department and the cost of their equipment, repair and maintenance, and means for the payment of the salaries of the members of the market board and the compensation of the secretary, the market masters, market inspectors and other necessary officers, employees and subordinates of the department during that period, except those for whom other provision is made in the preceding section of this title, the comptroller of the City of New York, upon the authorization of the board of estimate and apportionment, shall issue and sell revenue bonds to an amount not exceeding one hundred thousand dollars, the proceeds of which, or so much thereof as may be necessary, shall be applied to the expenses of the department of markets, as herein provided.

TITLE 2.

POWERS AND DUTIES OF DEPARTMENT.

Section 1166. Definitions.

1166a. Jurisdiction of the department.

1166b. General powers and duties of market board.

- 1166c. Selection of sites for new markets.
- 1166d. Wholesale terminal markets.
- 1166e. Market facilities; lease of market property.
- 1166f. Railroad spurs to markets.
- 1166g. Traffic regulations.
- 1166h. Standards, grades and labels.
- 1166i. Certificates as to consignments.
- 1166j. Delays in transportation.
- 1166k. Market auctions; auctioneers' licenses.
- 1166l. Consignments to auctioneers.
- 1166m. Information bureau.
- 1166n. Wallabout market.
- 1166o. Market licenses; existing, continued.
- 1166p. Licensed venders; street markets.
- 1166q. Market ordinances continued, subject to change of jurisdiction.

1166. DEFINITIONS. Unless otherwise expressly stated, whenever used in this article, the following terms shall respectively be deemed to mean:

1. "Market," any building, structure or place, the property of the City of New York or under lease to or in the possession of the City used or intended to be used, or any part of any street, avenue, parkway, plaza, square or other public place assigned or set apart by law or ordinance or other competent authority to be used as a public market for the buying, selling or keeping for sale of meat, fish or vegetables for human food or of flowers and ornamental plants;

2. "Private market," any store, cellar, stand or place (not being part of a public market) used for the buying, selling or keeping for sale of meat, fish or vegetables for human food;

3. "Meat," every part of any land animal and eggs (whether mixed or not with any other substance);

4. "Fish," every part of any animal that lives in water, or the flesh of which is not meat;

5. "Vegetable," every article of human food, which (not being meat, fish or milk) is held or offered or intended for sale or consumption as food for human beings.

All fish, meat and vegetables found at any place in the City, shall be deemed to be therein and held for sale or consumption as food for human beings, unless the contrary shall be distinctly proved.

1166a. JURISDICTION OF DEPARTMENT. The department of markets when organized as provided by this act shall have charge and control of all markets, as defined in this title.

1166b. GENERAL POWERS AND DUTIES OF THE MARKET BOARD. The market board upon the appointment and qualification of its members shall have charge and control of the

- 1. Repair, cleaning and maintenance of all markets;
- 2. Administration and management of all markets and the supervision and regulation of all business conducted therein;
- 3. Collection of all rentals or other revenues for the use of stands, stalls or other spaces in markets by dealers or venders;
- 4. Construction and equipment of new markets, when authorized by the board of aldermen and the board of estimate and apportionment.

1166c. **SELECTION OF SITES FOR NEW MARKETS.** The market board is employed, with the approval of the board of estimate and apportionment, to select, in the name and on behalf of the City of New York, any lands above or under water for markets and market facilities and to acquire title thereto, either in fee or to an easement appertaining thereto, as may be determined by the board of estimate and apportionment; provided, that the proceeding for acquiring title to any property so selected, or any interest therein, shall be taken and conducted in the manner prescribed in chapter twenty-one of this act.

1166d. **WHOLESALE TERMINAL MARKETS.** The market board, within six months after the date of the organization of the department of markets, shall report to the board of estimate and apportionment detailed plans and specifications for the establishment and organization of wholesale terminal markets, not less than one for each borough of the City, which shall be accompanied by certificate of selections of sites therefor, under the hand and seal of the market board, and appropriate maps accurately showing the location and transportation facilities of each such site.

1166e. **MARKET FACILITIES; LEASE OF MARKET PROPERTY.** The market board shall have power to construct, operate and maintain all necessary facilities for the convenient transaction of business in wholesale markets or to make contracts for the construction, operation or maintenance of such facilities, for the use and benefit of all dealers, venders or patrons of the markets, by private individuals, partnerships or corporations; subject, however, to the approval of any such contract, amounting to a franchise, by the board of estimate and apportionment or other proper city authority. The market board, with the approval of the board of sinking fund commissioners, shall have the power to lease any market property, other than buildings or parts of buildings in actual use as markets on the date when this act shall take effect, for the construction, use and maintenance of buildings or structures as receiving stations or storage plants for food supplies or other market purposes; provided that every such lease shall be made at the highest market price or rental, at public auction or by sealed bids and always after public advertisement for a period of at least fifteen days, in the City Record, and after appraisal under the direction of the board of sinking fund commissioners, made within three months of the date of such lease, and, provided further, that no such lease shall run for a term longer than ten years nor a renewal for a longer period than ten years. Each such lease shall contain covenants that any market dealer or vender, or the owner or proprietor of any private market, shall be entitled to rent space in any such receiving station, or to store meat, fish or vegetables in any such storage plant at reasonable rates, the schedule of which shall be subject to the control of the market board, and shall be conspicuously posted at all times in every receiving station or storage plant established or maintained under the provisions of this section.

1166f. **RAILROAD SPURS TO MARKETS.** The board of estimate and apportionment, with the approval of the mayor, is hereby empowered to grant and issue a permit to any railroad corporation operating in the City of New York, to construct, operate and maintain a single-track railroad spur from its main line tracks to and into any market or market property of the City for the purpose of transporting freight cars or express cars containing meat, fish, vegetables, fruit or dairy products, to such market and to remove empty cars therefrom; but no such permit shall be granted or issued permitting the occupation or use of any street or streets by any such railroad spur for a greater distance than three hundred feet, nor for a longer period than three years from the time of granting thereof. Each such permit shall provide that the same may be cancelled, annulled and revoked upon three months' notice in writing by the mayor to the railroad corporation constructing, operating and maintaining such spur, and that, thereupon, the right of such corporation in and upon the street or streets occupied by the spur shall cease and determine and the said track shall be

forthwith removed therefrom by said corporation, which shall restore the pavement, roadway and sidewalk of such street or streets to a usable and safe condition, at its own expense and without delay. In case any railroad corporation shall refuse or fail to discontinue and cease using any such railroad spur, and shall refuse or fail to remove the rails, ties and other appurtenances of such spur from any street or streets, within ten days after the right of such corporation to maintain and use the said spur shall have ceased and determined by written notice of the mayor, or otherwise, the president of the borough in which such railroad spur is located shall forthwith tear up and remove the rails, ties and other appurtenances of such spur and restore the pavement, roadway and sidewalk of the street or streets previously occupied by it to a usable and safe condition, and the expense of such removal of the spur, and the restoration of the pavement, roadway and sidewalks occupied by it, shall be recoverable by the City from the said railroad corporation by an action at law.

1166-g. **TRAFFIC REGULATIONS.** The market board shall make such necessary rules and regulations regulating traffic in and about terminal and other markets as it may deem necessary.

1166-h. **STANDARDS, GRADES AND LABELS.** The market board shall have power to establish standards and grades for different classes of food supplies and to grant and issue permits to use labels or symbols of such standards and grades to all producers and shippers who conform to standards and grades established by the board.

1161-i. **CERTIFICATES AS TO CONSIGNMENTS.** The consignor or consignee of any meat, fish or vegetables consigned to any market after the organization of the department of markets shall be entitled to have the same examined by a market inspector when it shall have been received at any market. The inspector shall immediately report a detailed description in writing of the consignment and the condition thereof at the time of his examination to the market master or person in charge of the market at which the same was received, and shall issue a certificate to the consignee thereof as to the condition of the consignment when received at the market, and a duplicate of such certificate shall be sent without delay to the consignor. Any such certificate shall be competent evidence in any court of the State of New York.

1166-j. **DELAYS IN TRANSPORTATION.** Upon receiving complaints or information from any shipper that meat, fish or vegetables, consigned to a market, auctioneer or merchant in the City of New York for sale, have been delayed in transit by any common carrier, the market board shall at once institute an investigation as to the cause of such delay, and willful or unnecessary delays shall be made the subject of a special investigation and prosecution. The market board is empowered to direct the immediate sale of consignments made in its care when such action is necessary to prevent the loss thereof. The board shall investigate complaints respecting matters within its jurisdiction and shall make such original investigations as may be deemed necessary concerning the existence of combinations in restraint of trade or other violations of law, and shall take due steps to have such violations prosecuted.

1166-k. **MARKET AUCTIONS; AUCTIONEERS' LICENSES.** The market board shall have power to grant licenses to any person engaged in the business of auctioneer of meat, fish or vegetables at a market as defined by section 1166 of this act, or desiring to be so engaged, on the payment by such person of a license fee of \$100 per annum, and filing a bond, to be approved by the board, with two good sureties in the penal sum of \$5,000. No auctioneer licensed under the provisions of this section shall be personally interested, directly or indirectly, in the sale of meat, fish or vegetables, except as auctioneer and to the extent of his legal fees and charges as such. The market board on complaint of any person having been defrauded by any such auctioneer, or by his clerk, agent or assignee, is authorized and directed to take testimony under oath relating thereto, and if the charge shall be sustained, in the opinion of the

board, it shall revoke the licenses granted such auctioneer and direct that his bond be forfeited. No person, persons, corporation, partnership or association shall hereafter carry on the business of auctioneer of any meat, fish or vegetables at a market as defined by section 1166 of this act in the City of New York without having first obtained from the market board a license authorizing such person, persons, corporation, partnership or association to carry on such business, and no person, persons, corporation, partnership or association whose license shall have been revoked for cause shall be licensed to carry on the business of auctioneer. Any person, persons, corporation, partnership or association who shall sell or offer for sale any meat, fish or vegetable at vendue or auction at a market as defined by section 1166 of this act, without having first obtained from the market board a license authorizing such person, persons, corporation, partnership or association to carry on the business of auctioneer of meat, fish or vegetables, shall be guilty of a misdemeanor and upon conviction thereof shall be imprisoned for not more than six months or by a fine not exceeding \$500, or by both such fine and imprisonment.

1166-l. **CONSIGNMENTS TO AUCTIONEERS.** Meat, fish or vegetables may be consigned directly to auctioneers licensed by the market board for sale at venue or auction, and shall after receipt be so sold as soon as possible, but the City of New York shall not be liable for loss or injury of any such consignment or part thereof. The market board shall provide space and accommodation for the care of all such consignments to any person, persons, corporation, partnership or association doing business at a market as defined in section 1166 of this act, and book entries of the receipt and sale thereof shall be made by the auctioneer showing the name of the consignor, the name and address of each purchaser or purchasers of any part thereof, and the amount or amounts received therefor. The auctioneer shall deduct all proper charges against such consignment and his commission as fixed by the schedule established by rule and regulation of the market board, and he shall thereupon transmit the balance of the proceeds of such sale or sales to the consignor, but nothing herein contained shall confer on said market board the right to fix the charges or commissions of any person, persons, corporation, partnership or association doing business at a private market.

1166-m. **INFORMATION BUREAU.** The market board shall organize and maintain a free bureau of information, for the use and convenience of producers and consumers and for general information, as to the supply of and price for meat, fish and vegetables, with lists of reputable shippers and buyers, commission merchants and auctioneers, and such information tending to facilitate and cheapen food distribution in the City of New York as the board shall deem it expedient to disseminate.

1166-n. **WALLABOUT MARKET.** The portion of Wallabout Market commonly known as farmers' square shall be kept for the exclusive use of farmers and market gardeners. Upon the organization of the market department the market board shall have and be vested with all the powers exercised by the commissioner of city works of the former city of Brooklyn, and shall have the sole power to lease any portion of said market lands and renew existing leases on such terms and at such rentals as may be agreed upon between the board and the lessees or holders, subject to the following provisions as to the rate of rent: In case the amount of rent for any renewal term of any lease be not agreed upon as aforesaid by the first day of January preceding the expiration of the previous term, the same shall, if either the market board or the lessee or holder shall so elect, be fixed as now provided by law except that the rent may be reduced in the discretion of the market board. The rents for such renewal terms, whether agreed upon as above provided, or fixed as now provided by law, shall not be less than an amount equal to two-thirds of the rent of the preceding term, nor exceed an amount equal to the rent of the preceding term and one-third thereof in addition thereto. The market board

may at any time, with the consent of the lessee or holder, vary or modify any of the provisions of any lease of such lands. The board may also adjust and settle any claims and controversies in regard to rent or any matters that appertain to any lease, both those which have heretofore arisen and any which may hereafter arise, during either the original term, or any renewal or extension thereof, as in its opinion justice may require. Nothing herein contained shall interfere with the jurisdiction of the department of docks and ferries of the City of New York over the piers, bulkheads and water front in and around said Wallabout market lands, nor with the jurisdiction of the president of the borough of Brooklyn over said Wallabout market lands, so far as concerns his power over highways. On and after the thirtieth day of April, nineteen hundred and four, distilled and rectified spirits, wine and fermented and malt liquors shall not be sold or offered for sale in Wallabout market lands; and all leases of any portion of such lands, granted under the provisions of this section, shall contain a provision restricting and prohibiting the sale or offering for sale of any such spirits, wine and fermented and malt liquors on any lands leased thereby, and on and after the passage of this act the state commissioner of excise shall not issue or renew any certificate permitting or authorizing the sale of distilled or rectified spirits, wine and fermented and malt liquors within the limits of said Wallabout market lands or in any portion thereof.

1166-o. MARKET LICENSES; EXISTING, CONTINUED. Upon the organization of the department of markets the market board shall have sole charge and control of every public market place and of the wagons engaged in the business of vending and selling farm and garden produce therein and elsewhere in the City, with full power to make suitable regulations concerning fees, the hours during which said business shall be conducted and the general management of the same. Subsequent to the organization of the department of markets any farmer, market gardener or other person desiring to vend or sell meat, fish or vegetables in any market shall present to the market board an application stating his name, occupation and a general description of the commodities which he desires to sell in such market, with the request that a license be issued to him for that purpose. On filing such application and paying the fee fixed by the market board, the board may issue to the applicant a license to use such space in such market, for a period to be designated in the permit, and not to exceed one year. Each market license shall be numbered and registered in the department of markets, and the market board shall issue to each licensee a metallic tag or plate with the number of the license thereon in such form and design as the board may prescribe. No unlicensed person shall be permitted to vend or sell meat, fish, vegetables or any other commodity, in any market, and each licensee while vending or selling in any market shall at all times cause his license tag or plate to be conspicuously displayed.

All licenses heretofore issued by the comptroller or by the collector of city revenue and the superintendent of markets, and in full force and effect on the date when this act shall take effect, shall be continued to the end of the term for which they were respectively issued, subject to the power of the market board to revoke or renew the same.

1166-p. LICENSED VENDERS; STREET MARKETS. Upon the organization of the department of markets the market board shall have charge and control of the vending and selling of meat, fish, vegetables, fruit, plants or flowers upon the streets, or in other public places, by farmers, market gardeners, peddlers and pushcart dealers, each of whom shall obtain from the market board upon the organization of the department of markets a license to vend and sell said commodities before engaging in such business in any street or public place, which license shall be numbered and registered in the department of markets. The market board shall issue to each licensed vender a metallic tag or plate with the number of the license thereon, in such

form and design as the board may prescribe, which tag or plate the licensee shall at all times conspicuously display when vending or selling upon any street or in any public place. The market board shall from time to time recommend to the board of estimate and apportionment such open spaces in the City as may be advantageously set apart as markets for farmers, market gardeners, peddlers, and pushcart dealers, and, thereupon, the board of estimate and apportionment shall have power to designate and set apart such places, or any of them, as markets for the use of farmers, market gardeners, peddlers and pushcart dealers, subject to such conditions and limitations as it may prescribe.

1166-q. MARKET ORDINANCES CONTINUED, SUBJECT TO CHANGE OF JURISDICTION. All provisions of the Code of Ordinances of the City of New York relating to public markets of the City and to carts, wagons or other vehicles in which any garden produce or other thing shall be brought to market are hereby continued, subject to the power and authority of the board of aldermen to add to, alter or otherwise amend or to repeal the same; provided, that all powers and duties conferred or imposed upon the comptroller or the collector of city revenue and the superintendent of markets, respecting public markets or market carts, wagons or other vehicles, by any existing provision of the Code of Ordinances, shall, from and after the date of the organization of the department of markets, be exercised and performed by the market board, or the market master, market inspectors or such other employees of the department of markets as the rules and regulations thereof may prescribe.

Section 4. Section thirty-four of the Greater New York Charter, as reenacted by chapter four hundred and sixty-six of the laws of nineteen hundred and one and amended by chapter five hundred and fifty-three of the laws of nineteen hundred and ten, is hereby amended to read as follows:

"34. LICENSES TO AUCTIONEERS. Subsequent to the organization of the department of markets as provided in this act the city clerk shall have authority to grant licenses to any person engaged in and carrying on the business and occupation of auctioneer, *except auctioneers of meat, fish and vegetables as such commodities are defined in 1166 of this act*, carrying on their business at a market as defined by section 1166 of this act, or desiring to be so engaged, on payment of the sum of one hundred dollars per annum, on such person filing a bond, approved by him, with two good sureties in the penal sum of two thousand dollars. The president of the board of aldermen on complaint of any person having been defrauded by any auctioneer *except auctioneers of meat, fish and vegetables as such commodities are defined in section 1166 of this act*, carrying on their business at a market as defined by section 1166 of this act, or by the clerk, agent or assignee of such auctioneer, doing business in said City, is authorized and directed to take testimony under oath relating thereto; and if the charge shall, in his opinion, be sustained, he shall revoke the license granted to such auctioneer, and direct his bond to be forfeited. No person, persons, corporation or association shall hereafter carry on the business of auctioneer, *except auctioneers of meat, fish and vegetables as such commodities are defined in section 1166 of this act*, carrying on their business at a market as defined by section 1166 of this act, in the City of New York, without having first obtained from the city clerk a license authorizing such person, persons, corporation or association to carry on the business of auctioneer; and no person, corporation or association whose license has been revoked for cause shall again be licensed to carry on the business of auctioneer. Any person or persons, corporation, partnership or association who shall offer for sale, or sell goods of any description, wares, merchandise, real or personal property, *except meat, fish or vegetables as defined in section 1166 of this act*, at a market as defined by section 1166 of this act, at vendue or auction without having first obtained from the city clerk a license authorizing such person or persons, corporation, partnership or association to carry on the business of auctioneer, shall be guilty of a misde-

meanor, and upon conviction thereof shall pay a fine of not less than twenty-five nor more than one hundred dollars for each offense. But nothing in this section shall apply to a duly appointed marshal of the City of New York who, by virtue of his office by levy under legal process, sells goods, wares and merchandise or real or personal property, thus levied upon by him under such process."

Section 5. Upon the organization of the department of markets, as provided by this act, the jurisdiction of the comptroller of the management of markets, and of the renting of stalls or stands therein and of the granting of permits and the collection of rents therefor, shall cease and all such jurisdiction shall thereafter devolve upon the market board. And, likewise, upon the organization of the department of markets as aforesaid, the jurisdiction of the president of each of the boroughs of the City of the construction, repairs, cleaning and maintenance of markets shall cease and all such jurisdiction shall thereafter devolve upon the market board.

Section 6. This act shall take effect immediately.

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